



A Land-Grant University

Auburn University is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools to award Bachelor's, First Professional, Master's, Educational Specialist and Doctor's degrees.

*Auburn University is an equal opportunity
educational institution.*

AUBURN UNIVERSITY BULLETIN

USPS 036-900

Volume 92

Number 1

June 1997

Published four times yearly —
June, September, December, March—
by Auburn University, Alabama 36849-5109.
Second-class postage paid at Auburn, AL 36830.
Postmaster, send address changes to: University Relations, 23 Samford Hall,
Auburn University, AL 36849-5109.

Contents

Board of Trustees	3	College of Liberal Arts	128
Administration	4, 441	School of Fine Arts	140
University Calendars	6, 220	School of Nursing	147
The University	8	School of Pharmacy	150
Academic Policies	12	College of Sciences and Mathematics	153
Financial Information	33	College of Veterinary Medicine	170
Student Services	40	The Graduate School	173
School and College Curricula	47	Reserve Officers' Training Corps	222
College of Agriculture	48	Courses of Instruction	228
College of Architecture, Design and Construction	59	Faculty and Staff	441
College of Business	65	Emeriti	474
College of Education	72	Agricultural Experiment Station	483
College of Engineering	97	Cooperative Extension System	489
School of Forestry	117	Enrollment Statistics	500
School of Human Sciences	121	Index	506

Internet address for the *Auburn University Bulletin* is www.auburn.edu/student_info/bulletin/

NOTE

The statements set forth in this bulletin are for informational purposes only and should not be construed as the basis of a contract between a student and Auburn University.

While the provisions of the bulletin will ordinarily be applied as stated, Auburn University reserves the right to change any provision listed in this bulletin, including but not limited to academic requirements for graduation, without actual notice to individual students. Every effort will be made to keep students advised of any such changes. Information on changes will be available in the Registrar's Office and/or the dean's office. It is important that each student be aware of his or her individual responsibility to keep apprised of current graduation requirements for the student's respective degree program.

CIVIL RIGHTS COMPLIANCE

Auburn University is an equal opportunity educational institution and operates without regard to race, sex, color, age, religion, national origin, disability or veteran status. The University complies with the regulations of Titles VI and VII of the Civil Rights Act of 1964, the Age Discrimination Act, the Age Discrimination in Employment Act, Title IX of the Education Amendments of 1972, Sections 503/504 of the Rehabilitation Act of 1973, the Vietnam Era Veterans Readjustment Assistance Act and the Americans with Disabilities Act of 1990.

EQUAL EMPLOYMENT OPPORTUNITIES

It is the policy of Auburn University to provide equal employment opportunities, including training for personnel mobility, for all individuals without regard to race, sex, age, religion, color, national origin, disability or veteran status.

Anyone wishing to file a complaint covered by the above should go to the Affirmative Action Office in Suite 13 of the Quad Center, or call 844-4794 between 7:45 a.m. and 4:45 p.m., Monday through Friday.

SEXUAL HARASSMENT

Sexual harassment constitutes a violation of Civil Rights law as a form of sex discrimination and will not be tolerated by the University. It subverts the mission of the University and threatens the careers, educational experience and well-being of students, faculty and staff.

Sexual harassment in academic settings and in the employment area where students are involved is defined as unwelcome sexual advances, requests for sexual favors and other verbal, graphic or physical conduct of a sexual nature when (1) submission to such conduct may be explicitly or implicitly a term or condition of a student's academic success or employment, (2) submission or rejection of such conduct may be used as the basis for employment or academic decisions affecting the student and the student's total educational and/or work experience or (3) such conduct has the purpose or effect of substantially interfering with a student's employment or academic performance or creates an intimidating, hostile or offensive work or educational environment.

Students who wish to make a complaint of sexual harassment, or other discriminatory conduct, should contact the Vice President for Student Affairs in Cater Hall, or call 844-4710 between 7:45 a.m. and 4:45 p.m., Monday through Friday.

SMOKING

Smoking of tobacco in Auburn University facilities and vehicles is prohibited except where signs are posted indicating otherwise.

WEAPONS

Auburn University prohibits possession, use and transportation on university properties of any dangerous or potentially dangerous weapons, including fixed-blade knives, shotguns, rifles, handguns, bows and arrows, crossbows, brass knuckles, air guns, swords and fireworks or explosive devices.

Board of Trustees

UNDER THE ORGANIC and statutory laws of Alabama, Auburn University is governed by a Board of Trustees consisting of one member from each congressional district, as these districts were constituted on January 1, 1961, an extra member from the congressional district in which the institution is located, and the Governor and State Superintendent of Education, who are members *ex officio*. The Governor is President. Trustees are appointed by the Governor, by and with the consent of the State Senate, and hold office for a term of twelve years, and until their successors are appointed and qualified. Members of the board receive no compensation. By executive order of the Governor in 1971, a non-voting student representative selected by the Student Senate serves as a member *ex officio*.

The Board of Trustees places administrative authority and responsibility in the hands of an administrative officer at Auburn University. The institution is grouped for administrative purposes into divisions, colleges, schools and departments.

Members Ex Officio

FORREST H. JAMES, JR., Governor of Alabama, President	Montgomery
EDWARD R. RICHARDSON, State Superintendent of Education	Montgomery
SGA President, non-voting	Main Campus
Student Body Representative, non-voting	Auburn University at Montgomery

Appointed Members

Terms Ending In 1999

EMORY O. CUNNINGHAM, <i>President Pro Tempore</i>	
Birmingham	Ninth Congressional District
JOHN V. DENSON, Opelika	Third Congressional District
BESSIE MAE HOLLOWAY, Prichard	First Congressional District
WILLIAM JAMES SAMFORD, JR., Opelika	Third Congressional District

Terms Ending In 2003

LOWELL R. BARRON, Fayetteville	Fifth Congressional District
CHARLES G. GLOVER, Cullman	Seventh Congressional District
JACK B. VENABLE, Tallahassee	Fourth Congressional District

Term Ending In 2007

VACANT	Sixth Congressional District
VACANT *	Second Congressional District
VACANT *	Eighth Congressional District

* As of January 30, 1997

Administration

GENERAL ADMINISTRATIVE OFFICERS

WILLIAM V. MUSE, B.S., M.B.A., Ph.D.
President

PAUL F. PARKS, B.S., M.S., Ph.D.
Provost and Vice President for Academic Affairs

DONALD L. LARGE, B.S., M.Ed.
Executive Vice President

C. MICHAEL MORIARTY, B.S., M.S., Ph.D.
Associate Provost and Vice President for Research

DAVID WILSON, B.S., M.Ed., M.Ed., Ed.D.
Associate Provost and Vice President for University Outreach

BETTYE B. BURKHALTER, B.S., M.A., Ed.D., Ph.D.
Interim Vice President for Student Affairs

BETTY M. DEMENT, B.S., M.A.
Vice President for Alumni and Development

JIMMY D. FERGUSON, B.S., M.B.A., Ph.D.
Vice President for Administrative Services

ROY H. SAIGO, B.A., Ph.D.
Chancellor, Auburn University at Montgomery

LEE F. ARMSTRONG, B.S., J.D.
General Counsel

DEBRA A. ARMSTRONG - WRIGHT, B.A., M.Ed., J.D.
Executive Director, Affirmative Action/Equal Employment Office

JAMES C. BROWN, B.S., M.Ed., Ed.D.
Executive Director, Minority Advancement and Minority Student Services

LYNNE B. HAMMOND, B.S.
Assistant to the President and Secretary to the Board of Trustees

DAVID E. HOUSEL, B.A.
Director, Intercollegiate Athletics

G. SAM LOWTHER, B.S., M.B.A.
Executive Director, Planning and Analysis

ALFRED H. MITCHELL, B.A.
Executive Director, Governmental Affairs

PETER R. PEPINSKY, B.A.
Executive Director, University Relations

Administration

ACADEMIC ADMINISTRATIVE OFFICERS

JAMES E. MARION, B.S., M.S., Ph.D.
*Dean, College of Agriculture, and
Director, Agricultural Experiment Station*

J. THOMAS REGAN, B.Arch.
Dean, College of Architecture, Design and Construction

C. WAYNE ALDERMAN, B.S., M.B.A., D.B.A.
Dean, College of Business

RICHARD C. KUNKEL, B.S.Ed., M.Ed., Ph.D.
Dean, College of Education

WILLIAM F. WALKER, B.S., M.S., Ph.D.
Dean, College of Engineering

EMMETT F. THOMPSON, B.S., M.S., Ph.D.
*Dean, School of Forestry, and
Associate Director, Agricultural Experiment Station*

JUNE M. HENTON, B.S., M.S., Ph.D.
*Dean, School of Human Sciences, and
Associate Director, Agricultural Experiment Station*

VACANT
Dean, College of Liberal Arts

CHARLOTTE A. PITTS, B.S.N., M.S.N., Ed.D.
Interim Dean, School of Nursing

R. LEE EVANS, JR., B.S., Ph.D.,
Dean, School of Pharmacy

STEWART W. SCHNELLER, B.S., M.S., Ph.D.
*Dean, College of Sciences and Mathematics, and
Associate Director, Agricultural Experiment Station*

TIMOTHY R. BOOSINGER, D.V.M., Ph.D.
*Dean, College of Veterinary Medicine, and
Associate Director, Agricultural Experiment Station*

JOHN F. PRITCHETT, B.S., M.S., Ph.D.
Associate Vice President for Academic Affairs, and Dean, Graduate School

BOBBY E. HOLLOWAY, B.A., M.L.S.
Interim Dean, Libraries

DONALD G. SWANSON, B.Theo., B.S., M.S., Ph.D.
Chair, University Faculty and Senate

S M T W T F S

JUNE 1997

1 2 3 4 5 6 7
8 9 10 11 12 13 14
15 16 17 18 19 20 21
22 23 24 25 26 27 28
29 30

JULY 1997

1 2 3 4 5
6 7 8 9 10 11 12
13 14 15 16 17 18 19
20 21 22 23 24 25 26
27 28 29 30 31

AUGUST 1997

1 2
3 4 5 6 7 8 9
10 11 12 13 14 15 16
17 18 19 20 21 22 23
24 25 26 27 28 29 30
31

SEPTEMBER 1997

1 2 3 4 5 6
7 8 9 10 11 12 13
14 15 16 17 18 19 20
21 22 23 24 25 26 27
28 29 30

OCTOBER 1997

1 2 3 4
5 6 7 8 9 10 11
12 13 14 15 16 17 18
19 20 21 22 23 24 25
26 27 28 29 30 31

NOVEMBER 1997

1
2 3 4 5 6 7 8
9 10 11 12 13 14 15
16 17 18 19 20 21 22
23 24 25 26 27 28 29
30

DECEMBER 1997

1 2 3 4 5 6
7 8 9 10 11 12 13
14 15 16 17 18 19 20
21 22 23 24 25 26 27
28 29 30 31

Auburn University Calendar 1997-98

1997 Summer Quarter (47 class days) Eight-Week Term (36 class days)

June 17 Orientation for new students.

June 18 Classes begin.

July 4 Independence Day Holiday.

July 22 Mid-Quarter.

Aug. 6 Classes end for Term.

Aug. 7-8 Final Examinations for Term.

Aug. 21 Classes end for Quarter.

Aug. 22 Dead Day.

Aug. 23, 25-28 Final Examinations for Quarter.

Aug. 29 Graduation.

*Registration for Fall Quarter 1997 is April 12 - August 10.**

1997 Fall Quarter (48 class days)

Sept. 22 Orientation for new students

Sept. 23 Classes begin

Oct. 11-Nov. 9. Registration for Winter Quarter *

Oct. 14 University Faculty Meeting

Oct. 27 Mid-Quarter

Nov. 24-30 Thanksgiving Holidays

Dec. 5 Classes end

Dec. 6 Dead Day

Dec. 8-12 Final Examinations for Quarter

Dec. 15 Graduation

1998 Winter Quarter (47 class days)

Jan. 5 Orientation for new students

Jan. 6 Classes begin

Jan. 19 Martin Luther King, Jr. Holiday

Jan. 24-Feb. 22 Registration for Spring Quarter *

Feb. 11 Mid-Quarter

Mar. 12 Classes end

Mar. 13 Dead Day

Mar. 14, 16-19 Final Examinations for Quarter

Mar. 20..... Graduation

1998 Spring Quarter (47 class days)

Mar. 27 Orientation for new students

Mar. 30 Classes begin

Apr. 14 University Faculty Meeting

Apr. 11-May 10 Registration for Summer Quarter *

Apr. 11-Aug. 16 Registration for Fall Quarter *

May 1 Mid-Quarter

May 25 Memorial Day Holiday

June 3 Classes end

June 4 Dead Day

June 5-6, 8-10. Final Examinations for Quarter

June 12 Graduation

**** 1998 Summer Quarter (47 class days).
Eight-Week Term (36 class days)**

June 16 Orientation for new students

June 17 Classes begin

July 3 Independence Day Holiday

July 17 Mid-Quarter

Aug. 3 Classes end for term

Aug. 4-5 Final Examinations for Term

Aug. 21 Classes end for Quarter

Aug. 22 Dead Day

Aug. 24-28 Final Examinations for Quarter

Aug. 31 Graduation

*Registration for Fall Quarter 1998 is April 11 - August 16. **

* Individual schools/colleges will publish advising dates that will be utilized during the University registration period.

** All 1998 Summer Quarter dates are tentative and subject to final approval prior to the 1998-99 catalog printing.

S	M	T	W	T	F	S
JANUARY 1998						
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

S	M	T	W	T	F	S
FEBRUARY 1998						
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

S	M	T	W	T	F	S
MARCH 1998						
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

S	M	T	W	T	F	S
APRIL 1998						
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

S	M	T	W	T	F	S
MAY 1998						
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

S	M	T	W	T	F	S
JUNE 1998						
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

S	M	T	W	T	F	S
JULY 1998						
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

S	M	T	W	T	F	S
AUGUST 1998						
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

The Graduate School calendar is located on pages 220-221 in this *Bulletin*.

The University

AUBURN UNIVERSITY, chartered in 1856, is located in Auburn, Alabama, and traces its beginning to the East Alabama Male College, a private liberal arts institution whose doors opened in 1859. From 1861 to 1866 the college was closed because of the Civil War. The college had begun an affiliation with the Methodist Church before the war. Due to financial straits, the church transferred legal control of the institution to the state in 1872, making it the first land-grant college in the South to be established separate from the state university. It thus became the Agricultural and Mechanical College of Alabama.

Women were admitted in 1892, and in 1899 the name again was changed, to the Alabama Polytechnic Institute. In 1960, the school acquired a more appropriate name, Auburn University, a title more in keeping with its location, size and complexity. The institution has experienced its greatest growth since World War II, and today enrolls 21,778 students, the largest on-campus enrollment in the state. The majority are Alabama residents.

Auburn University at Montgomery was established as a separately administered branch campus in 1967. The institution has developed rapidly, especially since moving to a new 500-acre campus east of Montgomery in 1971. The AUM enrollment is approximately 5,600.

Statement of Role

Auburn University, Alabama's 1872 Land-Grant University, has a unique role in the state's total higher education enterprise, embracing and enhancing the interrelated functions of instruction, research and extension. In fulfillment of this mission, Auburn, in its 141-year history, has developed into a premier comprehensive University, offering outstanding, economically accessible instruction to its undergraduate, graduate and professional students, conducting research in an ever-expanding array of disciplines, and reaching a growing number of Alabamians through public service and extension programs.

By striving for excellence in all its activities, Auburn represents a major resource in the state's economic, social and cultural development. In recognition of obligations to society, instruction, research and extension programs are also sensitive to national and global concerns. The primary resource for realizing these goals, as at all great universities, is the faculty; and it is through systematic recruitment, assignment, development, recognition and compensation programs that Auburn nurtures such a prominent, highly productive professional staff.

Instruction

Auburn offers the baccalaureate in more than 130 areas that span the spectrum of disciplines, and provides the state's only publicly supported programs in many fields, including several in agriculture, forestry, architecture, building science, pharmacy and veterinary medicine. Particularly strong academic programs can be found in the Colleges of Liberal Arts, Sciences and Mathematics, Business, Education and Engineering. Through the years, ROTC programs at Auburn have been nationally prominent in providing leadership for the military. Auburn supports a comprehensive graduate school, providing master's level programs in more than 64 areas and the doctorate in more than 40 fields, many unique in Alabama. Strong graduate programs are found in agriculture, the biological and physical sciences, forestry, mathematics, engineering, education, the human sciences, pharmacy and veterinary medicine. More recently, excellent graduate offerings have emerged in the liberal arts, social sciences and business. As a comprehensive center for graduate education and research, Auburn develops its academic programs to adapt to the changing of modern society.

While Auburn has long been widely recognized for its quality and diversity in undergraduate and first-professional offerings, more recently and in relation to expanding research efforts the scope of graduate degree programs has risen to prominence. Notable growth is anticipated in programs with expanded research activity, especially in agriculture and the biological sciences, the physical sciences, engineering, education, business and the veterinary and pharmaceutical sciences. At the master's level, larger enrollments will be seen in the social sciences, liberal arts, education, business, human sciences and the professional programs.

The liberal arts and sciences, at the heart of Auburn's undergraduate instruction, not only form the foundation for professional and career programs but also provide the structure for Auburn's traditional commitment to the enhancement of students' personal and intellectual growth and the development of a more responsible citizenry. The core curriculum, by providing students with a common set of experiences, developing analytical and communication skills,

and encouraging the understanding of culture and the natural world, has brought national attention to Auburn as an institution recognized for high academic quality.

The traditional commitment to excellence in teaching at both the undergraduate and the graduate level is reflected in the diversity of course offerings and in the variety of instructional approaches. Increasingly, electronic technology provides instructors the means for innovative and creative strategies, and the high academic aptitude of AU's incoming students make accelerated learning opportunities an important consideration in the continuing review and development of instruction.

Research

Research is the means through which new knowledge is created and new information is developed. As such, research at Auburn University is an essential link in its three-prong mission of *instruction, research and outreach*. Successes among the varied research activities within each of its 12 schools and colleges continue to bolster Auburn among the nation's top universities. These successes have been recognized by the National Science Foundation, the Carnegie Foundation and several national magazine surveys.

Auburn's role as a land-grant university emphasizes strong research programs in agricultural sciences, natural resources, and the biological sciences. Additionally, Auburn has a long-term commitment to engineering and the physical sciences which has developed these areas into primary research disciplines. Emphasis is placed on expanding research programs in education; veterinary medicine; the liberal arts; human sciences; business; architecture, design and construction; and nursing.

Results from Auburn research flow directly into the classroom through *instruction* and to the public through *outreach*. Auburn's research thrusts, the essential element in fulfilling its land-grant mission, are many, and all cannot be listed separately in this limited space. Yet, programs underway through the various research institutions at Auburn, such as the Space Power Institute and Center for the Commercial Development of Space; the National Center for Asphalt Technology; the Institute for Biological Detection Systems; the Scott-Ritchey Research Center; the Alabama Agricultural Experiment Station; Engineering Experiment Station; forestry; and the Pulp and Paper Research and Education Center continue to bring Auburn University to the forefront in research developments and in forming links with the state's business and industry.

Whether in the laboratory, the field or in the classroom, Auburn's research endeavors are diverse and comprehensive, at once focusing upon developing solutions to major problems that confront humankind and expanding the base of knowledge and technologies available to improve our quality of life. Additionally, major efforts designed to increase the efficiency and effectiveness of the administrative aspects and the protection and development of intellectual properties are central to Auburn's continual drive for improvements in its research mission.

These efforts mesh to create a research environment that enhances the state's economic, cultural, social and intellectual development and, at the same time, undergirds the university's undergraduate, graduate and outreach programs.

Outreach

Auburn University meets many practical needs of community, business and family by putting its knowledge base to work for Alabama through its Outreach mission and a unique statewide network of professionals, facilities and technology.

Across the state, the Alabama Cooperative Extension System links AU's resources directly to the people through offices in each of Alabama's 67 counties. These offices are part of a comprehensive communications and satellite network with the campus, a distribution system for hundreds of publications, and a contact point for more than 800 staff professionals.

On campus, University Outreach staff and participating faculty from each of Auburn's schools and colleges provide expertise and resources. Interdisciplinary centers include Distance Learning & Outreach Technology, Outreach Information & Marketing, the Outreach Program Office, the Center for Governmental Services and the Center on Aging. A number of outreach units are headquartered in the schools and colleges. Drawing on this university-wide expertise, Auburn's Outreach programming addresses crucial issues such as economic development, youth at risk, excellence in government, continuing education for professionals, improving quality of life, enhancing agricultural resources and protecting the environment.

Many Outreach programs use the Auburn University Conference Center, a state-of-the-art educational meeting facility featuring advanced audio/visual and computer technology in a beautiful and comfortable conference setting. The Auburn University Satellite Uplink provides C and Ku-band satellite capabilities for both national and international transmission of video

programming. A microwave link telecommunications system connects Auburn University at Montgomery users with the satellite uplink. Through this comprehensive university outreach, Auburn is having a positive impact on people's lives.

Purpose of the University

Based on its Statement of Role, Auburn University is dedicated to these purposes which have been approved by the faculty and the Board of Trustees:

Providing for its students, a broad general education, enhancement of personal and intellectual development and specialized education through the University's undergraduate, professional and graduate programs;

Preparing graduates whose knowledge, intellectual discipline, and experience in the multiple aspects of our culture will be manifest in service to the people in this state, the nation and the world;

Conducting a broad program of research, both basic and applied, to stimulate the faculty and students in the quest for knowledge, to promote their intellectual growth and development, to broaden the foundations of knowledge, to increase understanding of our world, and to aid society in resolving its scientific, technological, economic and social problems.

Creating and implementing effective programs of education and service that will provide special assistance throughout the state and the nation through the extension of the scientific, professional and cultural resources of the University to individuals, communities, institutions and industries, thereby contributing to an improved technology, better environmental and health conditions, enhancement of the general quality of life and the development of a more responsible citizenry;

Fulfilling the University's responsibilities for instruction, research, and service in science and technology, including agriculture and engineering and programs in biological sciences, mathematics, physical sciences, social sciences and statutory mandate for the Alabama Agricultural Experiment Station and the Alabama Cooperative Extension Service;

Encouraging scholarly and creative efforts in the arts and humanities so that the University may serve its students and the larger community as a vital source of general education and cultural enlightenment and as a stimulus toward participation of an educated citizenry in all avenues of life;

Fostering programs of education and research in those professional curricula uniquely or traditionally associated with Auburn University.

Auburn University is committed to reassessing its objectives and programs continually to assure their consistency with new knowledge and changing economic and social conditions and to seek more efficient and imaginative means of fulfilling the University's purposes.

Libraries and Archives

The main library on campus is the Ralph Brown Draughon Library, a 377,000 square-foot structure with seating for 2,500 and shelving space for about 2.5 million volumes. Branch libraries are located in the College of Veterinary Medicine and the College of Architecture, Design and Construction. The Draughon Library houses Special Collections, which includes rare books, maps, theses and dissertations, and material about the University and Alabama. The library is also home for the University Archives, a collection of University records and archival and manuscript material relating to Alabama history.

Collections include more than 2.4 million volumes, more than 2.8 million items in microform, 1.5 million government publications and 136,000 maps. The libraries receive more than 19,000 current serials, including 160 newspapers. In addition, as a U.S. government documents depository library, Auburn receives publications issued by the U.S. Superintendent of Documents, the U.S. Department of Energy and the U.S. National Aeronautics and Space Administration and the bulletins of the state agricultural and engineering experiment stations. It participates in the depository programs of the U.S. Defense Mapping Agency, the U.S. Geological Survey and the U.S. National Oceanic and Atmospheric Agency. The libraries were only the fifth institution in the U.S. to provide a World Wide Web gateway to the Government Printing Office's GPO ACCESS - a database of federal publications.

Auburn University Libraries' World Wide Web home page provides users with access to the Internet and several remote databases, as well as, a variety of CD-ROM databases mounted on a local area network, and to materials listed in AUBIE (Auburn University Bibliographic and Information Exchange), the libraries' on-line system. AUBIE includes the on-line catalog, LUIS, and several periodical databases.

LUIS lists all books, journals newspapers and most government publications the library holds, while various periodical databases contain references to selected journal, newspaper

and research reports on humanities, language and literature, social sciences, education, business, psychology, public affairs, science, agriculture, medicine and engineering subjects. All AUBIE databases may be searched by keyword, subject, author and title, and are accessible from workstations in the library, department offices or from microcomputers anywhere using the World Wide Web or telecommunications software and modems.

A fee-based service involving on-line searching of bibliographic databases is available to faculty, graduate students and others. Researchers have access to more than 800 databases from vendors including Dialog, BRS, National Library of Medicine, Orbit, STN International, RLG, Wilson and WESTLAW. Selective dissemination of information (SDI) searches are also available to researchers.

The Draughton Library contains 306 carrels for faculty and graduate student use, a room equipped for listening to approximately 6,500 sound recordings or viewing videos assigned for classroom purposes, and an instructional microcomputer classroom. Photocopiers are located in a central photocopying facility on the second floor of the main library, as well as on each floor of the library and in both branches. Other services available to library users include course reserve, electronic document delivery and interlibrary loans, as well as reference service and library use instruction by subject specialist librarians.

Circulation of library materials is fully automated through combined use of the on-line catalog and a barcoded user identification card. Borrowing privileges are extended to enrolled students; members of the administrative, research, instructional and extension staffs of the University; student and staff spouses; and active alumni association members. Alabama residents over the age of 18 may obtain borrowing privileges for an annual fee of \$25. The libraries also have reciprocal borrowing agreements with the University of Alabama system and Auburn University at Montgomery.

Division of University Computing

The Division of University Computing (DUC) provides university-wide computing and networking services to the students, faculty, staff and administrators of Auburn University. DUC services for these client groups fall into four categories: computers, network services, information systems and user support.

DUC provides two time-sharing host computers, an IBM parallel processor mainframe and a Sun UNIX system. Nine computing labs are located throughout campus with UNIX workstations, Macintosh and PC/Windows desktop computers. A library of general purpose software is available on each of these computers; all DUC computers are connected to the campus network. Accounts on DUC computers are free of charge to students and qualified AU employees. Computer accounts remain active as long as the account holder is enrolled or employed by the University; students may activate their own accounts through the computers in the DUC computing labs. In addition to the on-campus computers, a Cray supercomputer is available on the Alabama Supercomputer Network.

Network services provided by DUC include World-Wide Web, Gopher, anonymous FTP, Usenet News servers, electronic mail, X.500 directory, and network printing and plotting. Accounts on DUC computers allow access to external networks such as ASN, SURANet and the Internet. DUC also offers planning assistance, backup support, managed servers and office automation software for departmental networks.

DUC provides development, maintenance and production support for the University's major operational and management information systems, including student, financial, human resource and facilities systems. Access to these systems is available to authorized users through the on-line Administrative Information Management System (AIMS). A publicly available version, known as Public AIMS, is accessible without an account and provides a variety of general information about the University. The DUC Voice Automated Information System (VAIS) is a telephone-based system for on-line student registration and grade and financial aid inquiry. The Library's card catalog and bibliographic index system, AUBIE, also runs on the DUC mainframe computer; AUBIE is accessible from the campus network without an account.

DUC user support includes consulting, training and documentation. In addition, DUC publishes a quarterly newsletter, *The Computing News*. The DUC Hotline (844-4944) provides a central contact point for information, answers to questions and problem resolution. DUC has established software site licenses and microcomputer discount agreements which may be used for purchases by AU students and employees, as well as by university departments. In addition, special purpose equipment such as scanners and graphics devices are available in

DUC for use on a reservation basis. DUC also provides a test scoring/analysis service for instructors. The DUC User Support Office is located at 26 L-Building.

The Division of University Computing is a central service organization and does not conduct an academic program. Inquiries concerning computer curricula should be directed to the College of Engineering or the College of Business.

Academic Policies

Undergraduate Admission Policies and Procedures

Auburn University, an equal-opportunity educational institution, does not discriminate in its admissions policy on the basis of race, color, sex, creed, handicap, age or national origin. Preference is given to the admission of Alabama residents at the undergraduate level; in considering applications to professional schools or programs with restrictive admissions policies, the length of residency in the state will be a factor.

Applications from out-of-state residents are accepted for all curricula; however, the number of non-residents admitted is determined by the availability of facilities and faculty.

Application Forms. Application forms for admission to any undergraduate school or curriculum of the University can be obtained from the Admissions Office, Attention: Records Area, Auburn University, Alabama 36849-5145. Application to the Graduate School or the School of Veterinary Medicine must be made to those schools.

Process for Application. Individuals may apply for entrance to any quarter of a calendar year as early as June 1 of the preceding year. Applicants to Veterinary Medicine and Pharmacy will be admitted in the Fall Quarter only. Because of the large number of applications, credentials should be submitted as early as possible. In all cases, complete credentials along with the medical examination report must be filed at least three weeks before the quarter's opening. **The University reserves the right to establish earlier deadlines should circumstances warrant.** Prospective students are encouraged to apply for admission early and once admitted, to complete the enrollment process as early as possible.

Application Fee. A \$25 processing fee (international application processing fee is \$50), payable by check or money order, must accompany all admission applications and is neither refundable nor applicable to other fees. Responses on the application forms and on related materials must be complete and accurate; entrance may be denied or registration cancelled as a result of false or misleading statements.

Applicants may receive provisional acceptance after they submit the application form and current academic documents. However, they must complete and return a medical examination report form provided by the University at least three weeks before the quarter opens. The University may require additional medical examinations, and it may refuse admission to individuals whose health records indicate that their health or the University community might be adversely affected by their attendance. All applicants must certify that they have registered with the Selective Service Board or that they are not required by law to register.

Each applicant must furnish satisfactory evidence of good character. The University may deny admission to those whose presence is deemed detrimental to the institution or its students.

Admission of Freshmen: Academic Criteria. Favorable consideration for admission will be given to accredited secondary school graduates whose college ability test scores and high school grades give promise of success in college courses.

All secondary school students planning to apply for admission to Auburn should emphasize the following high school courses: English, mathematics, social studies, sciences and foreign languages.

High school curriculum requirements

English	4 years
Mathematics	3 years
Algebra I and Algebra II	(2 years)
Geometry, Trigonometry, Calculus, or Analysis	(1 year)
Science	2 years
Biology	(1 year)
Physical Science	(1 year)
Social Studies	3 years

Recommended: one additional Science, one additional Social Studies and one Foreign Language

Applicants are required to present scores from either the American College Test (ACT) or the Scholastic Aptitude Test (SAT) of the College Entrance Examination Board. High school students may secure application forms from their principals or counselors. Scores on these

tests are used as a partial basis for admission, for placement in English, chemistry, mathematics, and for awarding University scholarships and loans.

Applicants whose native language is not English are required to demonstrate proficiency in English.

Applicants of mature age who are not high school graduates may be considered for admission if their educational attainments are shown through testing to be equivalent to those of a high school graduate. The tests used include the USAFI General Educational Development Test, the American College Test and/or other tests recommended by the Admissions Committee. Applicants from nonaccredited high schools will be considered on an individual basis by the Committee.

Early Admission. Students of high academic promise may be admitted directly from the eleventh grade without a diploma. Basic requirements for early admission include:

1. Proper personal qualifications.
2. Superior competence and preparation, evidenced by the high school record and college aptitude test scores (ACT, SAT or other tests prescribed by the University Admissions Committee).
3. A letter from the high school principal assessing the applicant's emotional and social maturity and readiness for college work.

Additional information on this procedure is available at the Admissions Office.

Advanced Standing and Credit. Prospective students are advised to write the Registrar's Office at Auburn University requesting a brochure on the Advanced Placement Program.

Entering students with superior preparation or with special competence in a specific area may qualify for advanced placement or credit. Placement or credit may be granted on the basis of Advanced Placement Examinations of the College Board, scores on college ability or achievement tests, departmental proficiency examinations, College Level Examination Program (CLEP) General and Subject examinations, and other evidences of experience and competence.

Students enrolled at Auburn may apply to an academic department for a Departmental Proficiency Test if they have demonstrated a reasonable basis of experience or study in the subject area. If they score a satisfactory grade on the examination, they will be eligible for placement in an advanced course and for credit in the subject. Students who have previously enrolled for the subject at Auburn are not eligible for this test in the same subject.

The amount of advanced placement credit granted in each subject area is determined by the recommendation of the academic teaching department with the approval of the student's academic dean and the Registrar.

Students transferring to Auburn who have received advanced placement credits from another institution may be awarded these credits insofar as Auburn's requirements for awarding such credits are met. Advanced placement credits may not be substituted for residency requirement.

Admission of Transfer Students. A satisfactory citizenship record, a minimum 2.5 cumulative GPA on a 4.0 scale on all college work attempted, and eligibility to re-enter the institution last attended are required for transfer admission. Transfer applicants who were not eligible for admission to Auburn when they graduated from high school must present a minimum of 48 quarter hours or 32 semester hours of college credit. All transfer students who have attempted 48 quarter hours or 32 semester hours of college work must have earned a cumulative 2.5 GPA in at least 30 quarter hours, or 20 semester hours, of standard academic courses as required in Auburn University's Core Curriculum, in addition to the overall 2.5 cumulative average. These 30 quarter hours, or 20 semester hours, must include at least one course in each of the following areas: **English** (college-level composition or literature), **History**, **Mathematics** – college-level algebra or higher (Note, however, that college algebra does not satisfy Auburn's Core Curriculum mathematics requirement.) and **Natural Science** with a laboratory.

Transfer applicants to Architecture, Engineering, Interior Design, Interior Environments, Landscape Architecture, and Building Science must meet higher admission standards. The College of Engineering limits enrollment of students to its various curricula. In addition to the minimum criteria, students must be recommended by the Curriculum Admissions Committee. The criteria include an overall average of 2.8 and the completion of the first mathematics course listed in the chosen curriculum with a grade of C or better.

The Department of Consumer Affairs limits admission of transfer students to the Interior Environments (INE) curriculum, based on space available. Students from both on- and off-campus who wish to transfer into INE must submit a Statement of Intent, resumé and transcripts from all schools attended. On-campus transfer applicants must have a minimum cumulative GPA of 2.5 (on a 4.0 scale) on all collegiate work attempted. Off-campus transfer applicants must have a minimum 2.8 GPA on all collegiate work accepted toward the degree. The applicant's GPA, Statement of Interest,

related courses and work experience are criteria which will determine admission status. Applicants for the INE program are admitted only in the fall term.

Entrance examinations may be required of applicants transferring from colleges with which the University has had little or no experience.

Transfer Credit. Credit for Core Curriculum English courses is allowed only on grades of C or better. For other courses, the amount of transfer credit and advanced standing allowed will be determined by the appropriate dean and the Registrar. All colleges and schools accept for transfer credit only those courses with grades of C or better. The maximum credit allowed for work completed in a junior college will not exceed the number of hours required in the first two years of the student's curriculum at Auburn.

Students transferring from unaccredited institutions or programs may be granted provisional credit. When such credit is allowed, the final amount of credit will be determined upon completion by the student of one year of course work at Auburn University. If a C average is not achieved, the amount of credit will be reduced in proportion to the number of hours in which the student fails to earn a C average or better.

Transferring from Auburn University at Montgomery. An undergraduate enrolled at either of Auburn's campuses who wishes to transfer to the other campus will be considered a transfer student as if from any other accredited college. Because there are differences between some curricula and courses at the two institutions, transfer credit and advanced standing will be determined by the academic unit and the Registrar at the campus to which the student is moving.

Admission of Undergraduate Transient Students (Non-degree candidates enrolling for one quarter). A student in good standing in an accredited college may be admitted to the University as a transient student when faculty and facilities are available. Generally, transient students will not be admitted for the fall quarter.

To be eligible for consideration, an applicant must submit an application, an acceptable medical report and a letter of good standing bearing the signature of the dean or Registrar of the college in which the applicant is currently enrolled.

Permission to enroll is granted for one quarter only; a transient student who wishes to re-enroll must submit a new application. Transient status does not constitute admission or matriculation as a degree candidate. The transient is, however, subject to the same fees and regulations as a regular student except for the continuation-in-residence requirements.

Admission of Unclassified Students. Admission to most undergraduate programs as an Unclassified Student may be granted on the basis of the bachelors degree from an accredited college. Unclassified Students in Engineering must also meet the grade-point-average specified for Engineering transfer students. Unclassified students must submit the same admissions credentials as transfer applicants.

Special Admission. Persons who do not meet general admission requirements for freshmen but who are judged to have potential for success may be approved for special admission. An individual interested in special admission should contact the Admissions Office.

Admission of International Students. The University welcomes admission inquiries from international students. Because of limited facilities, only those students who are academically strong will be given serious consideration for admission. The international student should be proficient in English. In all cases, English proficiency is determined by satisfactory results on the Test of English as a Foreign Language (TOEFL), offered by the Educational Testing Service, Box 899, Princeton, N.J., 08540, U.S.A. The student must submit satisfactory results on the Scholastic Aptitude Test of the College Entrance Examination Board, also offered by the Educational Testing Service.

International students first should send all of their academic credentials to a professional credentials evaluation agency for evaluation. If they appear qualified and show promise of success in their chosen fields of study, they will be asked to make formal application. The application must be accompanied by an application fee of \$50 (not refundable). If the applicants present satisfactory academic credentials, test results, and evidence that they have sufficient funds to meet their college expenses (there is no financial assistance for undergraduate international students), they will then be sent an acceptance and the form I-20, the authorization for a student visa. International students are required to purchase the SGA-sponsored student insurance plan or provide evidence of equivalent coverage. This mandatory health insurance may be purchased upon arrival in the U.S. For further information, prospective students should write to the Admissions Office, Auburn University, Alabama 36849-5145, U.S.A.

Admission of Auditors. Auditing of courses is restricted, but when faculty and facilities are available, individuals who do not seek admission for course credit may audit a lecture course or the

lecture portion of a course upon approval by the Admissions Office, the dean, and the head of the department. A formal application must be filed, but the \$25 application fee and the medical examination report are not required. Auditors must register and pay appropriate fees. Although listed on class rolls, auditors are not required to take part in classroom discussion, tests, examinations, or reports, and they receive no grade or credit; however, students who attend the audited course rarely or not at all will have non-attendance of the course indicated on their records.

A student enrolled in other courses for credit will be granted permission to audit a course only on the approval of the dean and the head of the department of the course involved.

Students may not change from audit to credit after classes begin, but may change from credit to audit within the first three weeks of classes. No refund of fees will be made except for changes made during the first two weeks of classes in accordance with University policy.

Admission to Graduate Standing. Admission to graduate standing is granted only by the University Graduate School. A \$25 application fee is required. A bachelor's degree or equivalent from an accredited college or university and submission of satisfactory scores on the General Test of the Graduate Record Examinations (GRE) are required for Graduate School admission in all departments except Business. Applicants in Business must submit satisfactory scores on the Graduate Management Admission Test (GMAT). Certain departments require applicants for master's degree programs to take the GRE Subject Test. Applicants for admission to doctoral programs in some departments must submit GRE Subject Test scores also.

The undergraduate preparation of each applicant must also satisfy the requirements of a screening committee of the school or department in which the student plans to major. A student in good standing in a recognized graduate school who wishes to enroll in summer session, off-campus workshop, or short session, and who plans to return to his or her former college, may be admitted as a graduate transient. For more information, see the Graduate School section in this *Bulletin*.

Readmission. Students who have previously attended Auburn and who wish to re-enter must secure a registration permit from the Registrar's Office. Former students who have attended another college for at least one quarter or semester must be eligible to re-enter that institution if they desire to return to Auburn. Students who attended another institution for more than one quarter must have earned an overall C average or better since last attending Auburn to be eligible to re-enter AU. Two transcripts from the institution attended must be supplied to the Registrar.

Summer Orientation. To help entering freshmen adjust to the first quarter at the University, including scheduling of courses, Auburn provides a summer orientation program, "Camp War Eagle." Freshmen entering Fall Quarter attend sessions on campus during the summer prior to entrance. In these sessions, students meet faculty members, administrators, and student leaders, and plan with their advisors a schedule of their first quarter of college work. Other new students, including transfers, may meet with advisors during the regular registration period for the quarter in which they plan to enroll. Transfers will plan their schedules after their transcripts have been evaluated. A convocation for new students not attending summer orientation is held prior to the beginning of classes.

Accommodation Policy for Students with Disabilities

It is the policy of Auburn University to provide accessibility to its programs and activities and reasonable accommodation for persons defined as having disabilities under Section 504 of the Rehabilitation Act of 1973, as amended, and the Americans with Disabilities Act of 1990.

Students with disabilities desiring additional information should contact the Program for Students with Disabilities, 1244 Haley Center, (334) 844-2096 (Voice/TT).

Bachelor's Degree Requirements

To earn the bachelor's degree from Auburn University students must complete the requirements of the University Core Curriculum, and they must choose a curriculum and complete its requirements and those of the college or school with at least a 2.0 average in all Auburn courses attempted, at least a 2.0 average on transfer credits accepted for their degree program, and a 2.0 average in all course work attempted in the major. These requirements are University requirements. Individual colleges, schools and departments may have higher requirements. Credits required for graduation range from 180 to 257 hours. The student's dean clears subject and non-course requirements in the curriculum; the Registrar, together with the dean's office, clears total hours, GPA, and freshman English. A list of specific courses identified as major courses in each curriculum is available in the appropriate dean's office.

Auburn University's Core Curriculum

Auburn University's Core Curriculum provides a shared learning experience to all Auburn undergraduates. To this effect, the core curriculum is based on the principles of common learning, coherence and integration. Common learning refers to a body of knowledge, skills and emphasis that will be required in every student's program. Coherence is achieved by course sequences and by providing connections among courses. Integration is accomplished through interdisciplinary courses.

The core curriculum seeks to foster the development of educated citizens through its pursuit of three goals:

The development of the student's analytical skills. Courses are designed and taught to allow students to discern significant issues and events; ask appropriate questions; approach problems; gather, synthesize and interpret information; critically analyze established positions; and use knowledge creatively for the enhancement of society.

The nurture of the student's ability to communicate. The core curriculum requires extensive reading in literature, history and the sciences. The core curriculum promotes writing by requiring courses designed for that purpose and by including writing reinforcement courses in the student's curriculum.

The encouragement of the student's appreciation for their culture and the world in which they live. The core curriculum is concerned with the natural world, human behavior, history, moral values, technology, great ideas, aesthetic relationships and society.

CORE CURRICULUM (Honors equivalents are listed in the Honors Section.)

Core Requirement	Course Options	Hours
English Composition (10)	EH 110 English Composition or	5
	EH 400 Advanced Composition or	5
	EH 404 Technical Writing or	
	EH 408 Business and Professional Writing	
History (9)	HY 101-102-103 World History	3-3-3
	or	
	HY 121-122-123 Tech. and Civilization	3-3-3
	or	
	U 270-271-272 Human Odyssey	3-3-3
Literature (10)	EH 220-221 Great Books I & II	5-5
Science (10)	SM 101 Concepts of Science and one laboratory science	
	course. (SM 101 may be paired with PS 200, 215 or any course listed below except BI 101 and 105).	
	or	
	A minimum of 10 hours in a single sequence (including labs) in biological science, chemistry, geology or physics	
	Acceptable science sequences:	
	BI 101 AND 102 or 103 or 106 or 107	
	BI 105 AND 106 or 107	
	CH 101, 102, 103L, 104 AND 104L	
	CH 103 and 104, with labs	
	CH 111 and 112, with labs	
	GL 110 and 111	
	PS 205, 206 and 207, with labs	
	PS 220, 221 and 222, with labs	
Mathematics (5)	At least one course from MH 159, 160, 161, 162, 163 or any math course for which these are a prerequisite	
Philosophy (5)	PA 101 Introduction to Logic or	5
	PA 102 Introduction to Ethics or	
	PA 201 Deductive Logic or	
	PA 218 Ethics and the Health Profession or	
	PA 219 Business Ethics	
Social Science (9)	U 101 Social Science: Society, Culture and Environment ...	3
	U 102 Social Science: Political Economy	3
	U 103 Social Science: Individual and Society	3

Fine Arts (3)	MU 273 Music Appreciation or	3
	TH 200 Introduction to Acting or	
	TH 201 Introduction to the Theatre or	
	AR 260 Appreciation of Architecture or	
	AT 171 History of Art I or	
	AT 172 History of Art II or	
	AT 173 History of Art III	

English Composition Requirements. Students who began collegiate study Fall Quarter 1991 or thereafter must complete the English Composition requirements listed in the Core Curriculum: five quarter hours of freshman composition (EH 110 or 118) and five quarter hours of junior-level composition (EH 400, 404 or 408).

Transfer students may satisfy the requirements above with analogous courses from another institution completed with a grade of C or better. Transfer students should confer with their advisors concerning the composition requirement as soon as possible after enrolling at Auburn University.

Transfer students awarded advanced standing credit for composition at another institution will be awarded analogous credit at Auburn only if they have completed a subsequent composition course at the other institution with a grade of B or better.

Students entering an undergraduate school at Auburn University after receiving a bachelor's degree from an accredited institution are exempt from meeting these requirements.

All Students: Any student failing a composition course at Auburn University must repeat that course and any subsequent required composition course at Auburn University (Main Campus).

Students or advisors with special questions about placement or credit for composition may call the Director of Composition (334) 844-4620.

Literature Requirement. Students who began collegiate study Fall 1991 or thereafter must complete the literature requirements listed in the Core Curriculum (10 quarter hours of EH 220-221, Great Books, or EH 281-282, Honors Great Books). Sophomore standing is a requirement for EH 220, and EH 220 is a prerequisite for EH 221.

Transfer students may complete the relevant requirements above with analogous courses from another institution completed with a grade of C or better. For transfer purposes, any literature course at the sophomore level or above will be accepted as analogous to EH 220-221. However, only the first course in a world literature sequence will be accepted as meeting the prerequisite for EH 221. Transfer students with credit in another literature course may, of course, take EH 220.

Students or advisors with special questions about placement or credit for Great Books may call the Director of Great Books (334) 844-4620.

History Requirements. One of the purposes of the University's Core Curriculum is to give students an understanding of their culture and its backgrounds. Course sequences designed especially for this purpose are those in world history, technology and civilization and the Human Odyssey, an interdisciplinary science-humanities sequence of courses focusing on significant cultural shifts caused by discovery or invention. Students must earn nine hours of credit in one of these sequences.

Credit in history earned at another institution with a grade of C or better may be allowed on transfer as shown below in meeting this particular requirement.

1. If transfer students have three or four quarter hours in the first course of a three-course sequence in world history or western civilization or technology and civilization, they must complete HY 102 and 103 (for world history and western civilization) or HY 122 and 123 (for tech. and civ.). A transfer student who has taken the last course in a similar three-course sequence would take HY 101 and 102 or 121 and 122.
2. If transfer students have four or five quarter hours of credit in the first course of a two-course sequence in world history, western civilization or technology and civilization, they must complete HY 103 (for world history and western civilization) or HY 123 (for tech. and civ.). A transfer student who has taken the last course in a similar two-course sequence would take HY 101 or 121.
3. Students who have earned eight or more quarter hours in world history, western civilization or technology and civilization courses accepted as equivalent by the Auburn University Transfer Guide for the Alabama College System (or courses of comparable topics and time periods from other states) are exempt from the history requirement of the Core Curriculum.
4. Students entering an undergraduate program at Auburn, after earning bachelors' degrees from other accredited universities, may be exempted from the history requirements unless their curricula specify one of the three sequences described in this section.
5. Students with no credit hours in history may also elect to take Human Odyssey, U 270, 271 and 272 to fulfill the Core Curriculum history requirement.

Oral Communication Requirement. All Auburn University bachelor's degree programs provide components to ensure competence in oral communication skills. Program information documenting oral communication components is maintained in the Office of the Provost/Vice President for Academic Affairs. Appropriate accommodations will be made to enable individuals with disabilities to satisfy this requirement.

Academic Programs and Curricula

An **academic program** is an organized plan of study which, when successfully completed, is recognized by the awarding of a degree. It includes all courses and related activities required by the University and those required by a school, college, department or interdisciplinary program. **At Auburn University, the minimum number of quarter hours in an undergraduate academic program is 180, including the 61 quarter hours of the Core Curriculum and at least three quarter hours of free electives.** The academic program must include the University Core Curriculum, the major, and at least three quarter hours of free electives. It may also include a school or college core curriculum, a minor, and supporting course work. For undergraduates, it is the most general term describing the formal course of their baccalaureate education. Students who do not complete an approved academic program do not qualify for baccalaureate degrees. Students who are completing an academic program may take courses in addition to those required by it including a minor or free electives beyond those required for graduation by their academic programs.

A **program option** is a formal modification of an academic program by the offering department in order to meet objectives that are integrated with the basic program but may be more specifically focused. Some programs exist only in several program options, there being no unmodified program. As a formal variant of an academic program, a program option differs from a less formal grouping of course work within an academic program. These looser groupings often carry titles like specialization, concentration, focus, track, or emphasis, and these may or may not be standardized by the University. **At Auburn University, all program options, like all academic programs, must include the Core Curriculum and at least three quarter hours of free electives. Moreover, a program option must preserve the integrity of The academic program of which it is a variant by requiring at least half of the specific course work required by the program above and beyond the Core Curriculum. Specified groups of courses within an academic program that do not meet the definition of a program option must carry another name.**

A **curriculum model** is the schematic organization of an academic program that is listed in this *Bulletin*. **At Auburn University, all undergraduate academic programs and program options must be represented by a curriculum model in the Auburn University Bulletin.**

A **major** is that part of an academic program which differentiates it from other programs and is usually the largest part. The term designates that portion of the program which consists of a specified group of courses offered by a particular academic department or interdepartmental program. The major may include lower-division courses and always includes specified upper-division courses or choices among courses offered by the department or interdepartmental program. The major may include course work from other departments. The major does not include the other parts of the academic program: the Core Curriculum, a school or college curriculum (if any), a required minor (if any), supporting course work (if any), or free electives. **At Auburn University, all majors must represent substantial academic concentration in a well defined discipline or interdisciplinary field. While no minimum number of quarter hours is set, the typical major will require not fewer than 45 hours of course work in the discipline or in a closely allied field. Of these hours, a minimum of 30 must be taken in upper-division courses in the subject field. Departments must have the consent of other departments before requiring their courses in a major.**

A **minor** is an organized sequence or cluster of courses, including both lower- and upper-division courses, offered by a department or interdepartmental program. It is more restricted in scope than the major but may also have a somewhat different focus and objective that make it appropriate for students whose principal concentration is in another discipline. Not all departments or interdepartmental programs offer a minor. **At Auburn University, the term minor designates those sequences or clusters of courses that have been formally proposed as minors by departments or interdepartmental programs and approved by the University Senate Curriculum Committee. The minimum number of quarter hours in a minor is 25. Of these, ten hours may be lower-division courses. The remaining quarter hours in the minor must be courses numbered 300 or above. In fulfilling a minor, students may use any free electives or supporting course work required by their academic programs and additional course work above and beyond that required for graduation in their**

academic programs. Courses a student has taken in fulfillment of the University Core Curriculum, the school/college core curriculum (if any) or the major may not be included in a minor. Some academic programs may require students to earn a minor. Students whose academic programs do not require a minor are free to earn one, though in such cases they should recognize that fulfilling the requirements for a minor may delay their graduation. No academic program is required to allow for a minor in its curriculum model. Students must follow announced University procedures and deadlines for declaring a minor. Students may not earn more than two minors or major and minor in the same subject. No course taken under the S/U option may be counted toward a minor. Students must earn a minimum overall grade average of C (2.0) On all course work in the minor. Individual colleges, schools and departments may have higher requirements.

The phrase **supporting course work** designates courses that are required for the completion of a specific academic program but not included in the University Core Curriculum, the major, the school or college core curriculum (if any), the minor (if required), and free electives. At Auburn University, academic programs may require courses that are not specific to the major but that support the general education and preparation of students in that program. Because these courses are usually outside the department of the major area of study, departments must have approval of the departments offering the courses they designate as required supporting course work. Supporting course work may be used in satisfying the requirements for a minor.

Residence Policy. A minimum of 25 percent of the total quarter hours required for the bachelor's degree must be earned in residence at Auburn University. As a general rule, these hours must be taken in the final year and in the school/college curriculum of graduation. The student's dean may waive the final year's residence and may also allow course credit to be earned at another institution during the final year. However, the 25 percent of course work in residence at Auburn University is a firm requirement.

Credit for Correspondence Study. A student may earn a maximum of 25 percent of the total credits required for the baccalaureate degree by correspondence; however only 18 hours of the final year's work may be earned thus. An individual with fewer than three quarters in residence prior to the last academic year may earn only 15 hours by correspondence.

A student in residence may not enroll in a correspondence course if the course or a suitable substitute can be scheduled. The resident student may not exceed the maximum class hour load by adding a correspondence course. A student must have prior approval of his or her Auburn dean if the credits are to be applied toward an Auburn degree. Correspondence courses must be completed by mid-quarter prior to graduation.

The grade earned for correspondence credit will be entered on the student's record.

Information on available courses may be obtained from Distance Learning and Outreach Technology, 204 Mell Hall, Auburn University, Alabama 36849, (334) 844-5103.

Credit For Military Science and Physical Education. A student may be allowed a maximum of 18 credits in military science courses toward graduation, insofar as the credits are applicable to the student's curriculum. Of these 18 credits a maximum of six credits of basic ROTC at the rate of one credit per course is allowed toward graduation. A student may be allowed six credits on physical education activity courses toward graduation. A student who has served in the Armed Forces may receive physical education credits as follows: for less than six months of service, no credit; for six months to less than a year, two hours of credit for Physical Education; for one year or more in the service, three hours of credit. Credits may also be allowed for military service courses. Application for credit for military experience should be submitted to the Registrar. The student's academic dean must approve credit into the student's curriculum.

Academic Program Assessment

Auburn University is committed to the assessment of its academic programs. Departments and faculty have various procedures for assessing program effectiveness. Some of these may require that students take comprehensive or exit examinations in their major or examinations at other points during the completion of the requirements for the degree.

Grades

Grade Average Requirement. To earn the bachelor's degree from Auburn University students must have at least a 2.0 average in all Auburn courses attempted, at least a 2.0 average on transfer credits accepted for their degree program, and a 2.0 average in all course work attempted in the major. These requirements are University requirements. Individual colleges

and schools may have higher requirements. Identification of the specific courses counted as courses in the major is available from the student's dean's office.

Grade Definitions. Final passing grades are A, superior; B, good; C, acceptable; D, passing; and S, satisfactory. Final failing grades are F, failure; FA, failure for excessive absences; XF, absent from final examination and failing at the time; U, unsatisfactory; and WF, officially dropped with permission of the student's dean but failing at time of withdrawal.

An NG, no grade, thesis and dissertation research credit, is assigned to courses 699 Research for Thesis and 799 Research for Dissertation.

An X is assigned if the student missed the final examination and is passing, even if the student has other incomplete work. The student must clear X grades during the first four days of the next quarter in residence or they will be recorded as Fs.

An IN is assigned if the student has cleared the final examination but has not completed other required work. Undergraduates must clear IN grades during the next quarter in residence or they will be recorded as Fs. Graduate students must clear IN grades during the next two quarters to avoid having them recorded as Fs. IN grades are changed by the Registrar upon written notice from the instructor. A final grade may be changed only by the written request of the instructor, with approval of the department head and dean, submitted to the Registrar.

A grade of F and additional penalties may be assigned for academic dishonesty. See the Student Academic Honesty Code section in the Tiger Cub for further information.

Grade Assignment For Class Withdrawals. A student who withdraws from a course prior to the 10th class day will have no grade assignment; however, from the 10th class day through mid-quarter a W (Withdrawn Passing) grade will be recorded for the course. **A course may be dropped with a W after mid-quarter only under unusual conditions and only with permission from the student's dean.** When approval for dropping the course under such circumstances is granted, a W may be assigned only when the instructor indicates that the student is clearly passing the course. Otherwise, a grade of WF (Withdrawn Failing) is assigned.

Grade Average and Quality Point Computation. A 4.0 grade scale is used. An A equals 4.0; B, 3.0; C, 2.0; D, 1.0; and F equals 0.0. Only course work attempted at Auburn University is used in determining the grade report average and continuation-in-residence requirements. S and U grades do not enter into grade-point computations.

S-U Grading. Grades of S (Satisfactory) and U (Unsatisfactory) may be assigned only to courses approved to be graded S-U, and courses elected under the S-U option.

A junior or senior with a minimum overall grade average of 2.5 on at least 30 hours of credit earned at Auburn may elect any course to be graded on the S-U option, except for courses required in the Core Curriculum or for required courses as defined by the student's curriculum. A total of 20 credits may be earned at the rate of one course per quarter. Students will receive credit toward a degree for these courses, provided credit is normally accepted in their curricula for these courses.

An unclassified student may schedule one or more courses on the S-U option with the approval of the dean. Courses completed on the S-U choice by unclassified students may not be applied later to degree requirements should the student become a degree candidate.

A graduate student may enroll in undergraduate courses, except for 500-level courses taken for graduate credit, under the S-U option on the major professor's recommendation.

Students are not permitted to change from S-U grading to conventional grading or vice versa after the 10th class day.

Repeat Of Courses. No student may repeat a course for credit in which the student has previously earned a grade of A, B, or C without written permission by the student's academic dean. Courses specifically designated as repeatable in the *Auburn University Bulletin* are exempt from this regulation.

Grade Reports. In compliance with the Family Educational Rights & Privacy Act, one copy of each student's grade report is mailed at the end of each quarter to the student at the address furnished by the student.

Undergraduate Continuation in Residence Requirements

Auburn University may place an undergraduate student on academic warning or suspension at any time if the student flagrantly neglects academic work or fails to make satisfactory progress toward graduation.

An academically suspended student who has incomplete or other deferred grades which could, when cleared, remove the suspension will be permitted to register conditionally for the next quarter. The suspension must be removed within two weeks of the beginning of the quarter; otherwise the student will be resigned by the Registrar's Office.

No credit earned at another institution by a student on academic suspension from Auburn will be used in clearing a suspension or in meeting requirements for an Auburn University degree.

A student who resigns after mid-quarter may be subject to academic suspension. (See Resignation for further information.)

Academic Warning status is imposed at the end of any quarter for which the student's cumulative GPA on Auburn course work is below 2.0.

Academic Suspension. Any student who is on Academic Warning status will be placed on Academic Suspension if all three of the following conditions apply: (1) the quarterly GPA is below 2.2 and (2) the student fails to earn at least three grade points above a C average in that quarter and (3) the cumulative GPA on Auburn course work is below that required for the designated number of hours attempted as follows:

All Hours Attempted at Auburn Plus All College-Level Hours Accrued from other Colleges and Universities*	Required Minimum Auburn Cumulative GPA
1-50	1.50
51-100	1.70
101-150	1.80
151-200	1.90
201 or more	2.00

* For classification purposes only. The student's dean approves those hours accepted for that degree credit.

Beginning freshmen - those who entered without transfer credit - are not subject to suspension until the end of their third quarter.

Terms of Suspension. A student who incurs a First Academic Suspension may not enroll in the University for a minimum of two quarters. Summer quarter is included as any other quarter. A student returning from academic suspension will be on Academic Warning status. A student who incurs a Second Academic Suspension may not enroll in the University for a minimum of four quarters. A student who incurs a Third Academic Suspension will be expelled from the University.

Suspension for Resigning Students. The academic dean will review all grades for the quarter in which a student who is on Academic Warning resigns after mid-quarter. If the student's GPA in that quarter's course work results in the student's cumulative GPA being below the minimum cumulative GPA required, the student will incur Academic Suspension.

Appeals. Students who incur Academic Suspension under these rules may appeal the decision to the Admissions Committee if they believe extraordinary circumstances merit an exception to the rules. Any student on indefinite suspension must appeal to the Admissions Committee for readmission to the University. These requirements are University requirements. Individual colleges and schools may have higher requirements.

School of Pharmacy. A student enrolled in the School of Pharmacy who is placed on academic suspension and who wishes to re-enter the School must, in addition to complying with other University readmission requirements, be approved for readmission by the Pharmacy Admissions Committee and, when applicable, by the University Admissions Committee.

College of Veterinary Medicine. Any student who earns less than a 2.25 GPA for any quarter will be placed on academic probation. A student who fails to earn a 2.25 GPA for any two quarters in the same academic or calendar year may be dropped from the College of Veterinary Medicine for scholastic deficiency. In addition, a student who does not have an overall average of 2.25 for an academic year or who does not have a veterinary overall average of 2.25 for an academic year or who does not have a veterinary school cumulative average of 2.25 at the end of any academic year may be required to withdraw from the College of Veterinary Medicine.

A student who makes a grade of F in any course may be dropped from the College of Veterinary Medicine until such time as the course is offered again. Such student may be required to repeat certain other courses in the curriculum for the quarter in which a grade of F was earned.

Students who are dropped under the above provisions are eligible for admission to other curricula provided they meet the general scholastic requirements for continuance in the University. Scholastic penalties incurred during enrollment in the College of Veterinary Medicine will become part of the student's record.

Satisfactory Progress

Student Athletes. In addition to meeting the general academic requirements of the University, student athletes must meet all academic requirements, including those relating to satisfactory progress toward a degree, set forth in the legislation of the Southeastern Conference (SEC) and of the National Collegiate Athletic Association (NCAA).

Student Financial Aid Recipients. In addition to meeting the general academic requirements of the University, applicants for student financial aid funds must maintain Satisfactory Academic Progress to receive, or to continue to receive, assistance through federal, state and institutional

student aid programs. Descriptions of these Satisfactory Academic Progress requirements for distinct classifications of Auburn students are available from the Office of Student Financial Aid.

Veterans. All VA eligibles (Chapters 30, 31, 32, 35 and 106), in addition to meeting the general academic requirements set forth by the University, must maintain satisfactory academic progress as approved by the State Approving Agency of the State of Alabama, Department of Education. Such standards are as follows: Any undergraduate VA eligible must have a 2.0 GPA after the student has earned 178 hours at Auburn University. This would be checked at each quarter's end and, the VA benefits of any VA eligible not meeting this requirement would be terminated. Separate standards of progress apply to graduate students as outlined in the section entitled "The Graduate School."

Dean's List

The name of every eligible student who meets certain scholastic requirements for a given quarter is placed on a list prepared for the dean of the student's College or School. This honor is also noted in the student's permanent record.

To meet Auburn University's requirements for inclusion on the dean's list, the student must be enrolled for 15 or more credit hours exclusive of any S-U option courses, pass all courses attempted for the quarter, and earn a GPA of at least 3.4 (on the 4.0 system). Furthermore, the dean of each College or School has established specific criteria governing inclusion on the list. The special requirements, applied in addition to the University regulations, are listed as follows:

College of Agriculture: 3.70 average.

School of Architecture: 3.70 average; only if an S-U graded course is required in the student's curriculum may it be included in the 15-hour minimum total.

College of Business: 3.80 average.

College of Education: 3.80 average.

College of Engineering: 3.70 average; only if an S-U graded course is required in the student's curriculum may it be included in the 15-hour minimum total.

School of Forestry: 3.70 average.

School of Human Sciences: 3.80 average.

College of Liberal Arts: 3.60 average.

School of Nursing: 3.75 average.

School of Pharmacy: 3.75; only if an S-U graded course is required in the student's curriculum may it be included in the 15-hour minimum total.

College of Sciences and Mathematics: 3.75 average.

College of Veterinary Medicine: grades in the upper five percent of the enrollment of each class.
Interdepartmental-Environmental Science: 3.65 average.

Class Attendance

1. Students are expected to attend all their scheduled classes. College work requires regular class attendance as well as careful preparation. Specific policies regarding class attendance are the prerogative of individual faculty members. Faculty shall inform each class in writing at the beginning of the course regarding the effect of absences on the determination of grades.
2. The student is expected to carry out all assigned work and to take examinations at the class period designated by the instructor. Failure to carry out these assignments or to take examinations at the designated times may result in an appropriate reduction in grade, except as provided in paragraph 4 below.
3. Instructors shall determine the policy regarding grading which they feel is best for the course. This policy shall be presented to the class, in writing, at the beginning of the quarter and will govern the actions of the instructor in the course.
4. Arrangements to make up missed work due to excused absences are to be initiated by the student. Instructors are expected to excuse absences for:
 - a. Illness of the student or serious illness of a member of the student's immediate family. The instructor may request appropriate verification.
 - b. The death of a member of the student's immediate family. The instructor may request appropriate verification.
 - c. Trips for members of the student organizations sponsored by an academic unit, trips for University classes, and trips for participation in intercollegiate athletic events. When feasible, the student must notify the instructor prior to such absences, but in no case more than one week after the absence. Instructors may request formal notification from appropriate University personnel to document the student's participation in such trips.

- d. Religious holidays. Students are responsible for notifying the instructor in writing of anticipated absences due to their observance of such holidays.
 - e. Subpoena for court appearance.
 - f. Any other reason the instructor deems appropriate.
5. The regularly accepted time for class to begin is 10 minutes after the hour. If the instructor does not appear within 20 minutes after the hour, it may be assumed the class is canceled. All classes are to be dismissed promptly on the hour.
 6. It is University policy that all classes will meet as scheduled on the last day before and the first day after holiday periods designated by the University.
 7. Unresolved problems regarding class attendance or procedures should be referred to the University Student Grievance Committee.

Examinations

Examinations are classified as (1) final examinations at the end of each quarter; (2) special examinations; and (3) other course examinations as determined by the instructor.

Announced tests in undergraduate courses will be administered at a regularly scheduled meeting of the course. Exceptions to this regulation may arise in specialized courses requiring performance or oral tests, and in multiple-sectioned laboratory classes requiring practical laboratory tests. Faculty having sound reasons for scheduling tests at times other than regularly scheduled meeting times are to obtain approval from the department head prior to the beginning of the quarter, and are to present a written schedule of these changes to the class during the first few days of the quarter. Rescheduled tests are not to interfere with other scheduled academic endeavors of the students involved, and an appropriate reduction in regularly scheduled class time is to be given to compensate for the rescheduled test period.

Final Examinations. A final examination is a desirable means of evaluation in most undergraduate courses. In unusual circumstances, performance tests, term papers, research projects or other forms of evaluation appropriate to the objectives of the course may be substituted for a final examination with the approval of the department head, who will report such action to the dean and Provost. Faculty not giving a final examination are to present to the class at the beginning of the quarter a written description of the forms of evaluation to be used and the means of determining final grades. The professor teaching a 600-level course shall determine whether a formal final examination is appropriate.

Final examinations are to be given as scheduled in the quarterly examination schedule. Exceptions to this policy require prior approval by the Provost. Rescheduled examinations must not interfere with scheduled academic activities of the students involved.

Student Academic Grievance Policy

The Student Academic Grievance policy, which appears in full in the student handbook, *Tiger Cub*, is designed to resolve academic grievances of students which result from actions of faculty or administrators.

Graduation

Beginning Fall Quarter 1996, to earn a bachelor's degree a student must earn a 2.0 GPA on all courses attempted at Auburn, a 2.0 GPA on all transfer courses which apply to degree requirements and a 2.0 GPA on all work attempted in the student's major. These are University requirements. Individual colleges and schools may have higher requirements. Identification of the specific courses counted as courses in the major in an academic program is available in the dean's office.

Clearing for Graduation. Seniors should see their dean's office advisor for a graduation check during the quarter before the quarter of graduation; they must also clear deferred grades by the tenth day of the graduation quarter for courses to be used toward degree requirements. Correspondence courses must be completed by mid-quarter prior to graduation.

A graduation fee is payable to the Cashier's Office at the beginning of the quarter of graduation. A student who is a candidate for a degree in a quarter in which no credit work is taken is required to register in such quarter as a prerequisite to graduation. (For members of the faculty and staff the charge is reduced to \$5.00.) The graduation fee is in addition to this charge. See "Fees and Charges" in this *Bulletin* for details. If a student is in default on any payment due the University, the diploma and academic record will not be issued until the matter is cleared. Degrees are conferred at Commencement exercises each quarter. If a student does not plan to attend the exercises, arrangements should be made with the dean or the Registrar to receive the degree in absentia.

Graduation Honors

Students with a minimum overall grade average of 3.4 are graduated Cum Laude; a 3.6 Magna Cum Laude; and a 3.8 Summa Cum Laude. This distinction of high academic achievement is placed on the student's diploma and on his or her permanent record.

The grade average for graduation honors must be achieved on Auburn University course work. At least 90 hours in residence at Auburn University are required for graduation honors. Grades of S or U and non-credit courses are not used in the calculations. Students earning a second baccalaureate degree must earn the minimum overall grade average required for honor distinction on the additional hours completed for the second degree. Those additional hours must total at least 90 credit hours.

Students meeting all of the requirements of the University Honors Program graduate as University Honors Scholars.

Earning a Second Baccalaureate. To earn a second bachelor's degree, a student must complete an additional 45 hours or all the additional requirements for the second degree, whichever is the greater number of hours. Students who are completing a second degree must comply with all the same grade point requirements and residency requirements as other students.

Enrollment

Registration and Scheduling

Every student who makes use of the instructional staff and facilities of the University must register and pay fees. This rule also applies to students who are clearing incomplete grades, clearing for graduation, or working on graduate theses. The University Calendar on pages 6 and 7 lists the dates for registration and late registration/schedule adjustment. Students are urged in some curricula required to seek guidance from their advisors before attempting to register for classes, and they are urged to register during their assigned registration period (see Auburn University Schedule of Courses). Students should register for courses during the quarter preceding the term they plan to attend. A currently enrolled student who fails to register during the assigned registration period will be required to register during the late registration/schedule adjustment period and will be assessed a late registration fee. **When registering, the student is responsible for observing the prerequisites or corequisites of courses.** Any waiver of these requirements must be approved by the department head, or in some cases, the dean. Waiver of the junior standing prerequisite for courses that may be taken for graduate credit must have the Graduate School dean's approval. A student's class load may be reduced by the dean. Students may register for classes through the 10th class day subject to approval of college, school or department offering the course. No student will be allowed to register after the 10th day of classes without the approval of the Provost.

Registration and Readmission Permits. All students must have an electronic registration permit and a personal access code (PAC number) prior to participating in registration, late registration or schedule adjustment. Consult the Auburn University Schedule of Courses for instructions.

Readmission. A student seeking readmission who has attended another college since being enrolled at Auburn University must (1) be eligible to re-enter the last institution attended and (2) have a 2.0 average overall in course work attempted at other colleges attended two or more terms. Two official transcripts from each institution attended must be furnished to the Registrar's Office.

Transient Student Form. An Auburn student in good standing may be approved to take courses at another institution on a transient basis for one quarter. The Office of the Registrar issues a "Transient Student Form" that, when signed and stamped, certifies that the student is in good standing and eligible to return to Auburn. The student's dean's office advisor then lists courses and credits approved to be taken elsewhere. The completed form is taken or mailed to the intended university prior to course enrollment. Credits earned elsewhere without a fully executed Transient Student Form may not be accepted for credit here.

Concurrent Enrollment. During any given quarter, students enrolled at Auburn University are expected to take courses only at Auburn. Only under exceptional circumstances, and with prior permission from the dean, may a student receive transfer credit toward the Auburn degree while concurrently enrolled at another college or university.

Course Load

The maximum load for students in undergraduate curricula is 20 quarter hours. A normal load is 15-20 hours per quarter. An undergraduate must enroll for 12 or more hours to be considered full-time for athletic, financial aid, loan and insurance purposes. With the dean's approval, students may schedule less than a normal load.

The maximum load may be exceeded under the following circumstances:

1. The academic dean may approve up to 20 hours as a convenient load.
2. On approval of the dean, students may schedule overloads not to exceed 23 hours if, during their last residence quarter at Auburn University in which they carried 15 or more hours, they passed all work attempted and earned a GPA of 2.5 or higher. Students who have scheduled fewer than 15 hours during an intervening quarter (or quarters) will retain the overload privilege if all work carried was passed with a minimum GPA of 2.5 in each intervening quarter. In special cases the dean may make exceptions to the 2.5 requirement, by electronic notice to the Registrar.
3. On approval of the dean, graduating seniors who are ineligible to carry an overload may schedule a maximum of 23 hours if the overload will allow them to graduate in that quarter.

Students who register for course work in excess of the approved load may be required by the dean to drop the overload during the Schedule Adjustment period.

Resignation from all courses. Students who wish to resign from all courses for a quarter should contact their deans; resignation cannot be done through the telephone registration system. Students may withdraw without penalty of failure if they resign no later than mid-quarter, a date specified in the University calendar.

After this date, the dean will obtain from the student's instructors his or her scholastic standing at the time of resignation, and report it to the Registrar. If the student is failing in over half of the work, the number of hours reported as failing will be counted as credit hours attempted and will be included in academic eligibility calculations. Those hours reported as passing will be dropped and will not be counted in the grade-point computation. Furthermore, if a student has been placed on academic suspension at the end of the last quarter in residence prior to the resignation, the grades will be reviewed by the dean to determine whether the student will be placed on further academic suspension.

When a student through illness or physical disability is forced to resign after mid-quarter, and when this condition has been the main factor in causing scholastic deficiencies, discretionary power in waiving the scholastic penalty will rest with the student's dean. A student who is resigned for disciplinary reasons will retain the academic status achieved immediately prior to the disciplinary action.

Withdrawal from a course. No grade penalty is assigned for dropping a course on or before mid-quarter. A student who withdraws from a course prior to the 10th class day will have no grade assignment; however, after the first 10 days a W (Withdrawn Passing) grade will be recorded for the course.

A course may be dropped with a W after mid-quarter only under unusual conditions. When approval for dropping the course under such circumstances is granted by the student's dean, a W may be assigned only when the instructor indicates that the student is clearly passing the course. Otherwise, a grade of WF (Withdrawn Failing) is assigned.

Classification

The undergraduate's classification will be determined by the number of credit hours earned at Auburn and elsewhere.

Freshman 47 or fewer quarter hours.	Sophomore 48-95 quarter hours.
Junior 96-143 quarter hours.	Senior 144 or more quarter hours.

The numbering sequence for identifying the classification of students is as follows; 1, Freshman; 2, Sophomore; 3, Junior; 4, Senior; 5, fifth year for Pharmacy, Architecture, Landscape Architecture and Veterinary Medicine; 10, Unclassified (non-degree students); 12, Special and Transient students and auditors only; 6, 7, 8, 9, 11, 13 and 14 are Graduate student classifications.

A student with a baccalaureate degree who undertakes a program for a second bachelor's degree will be classified as an undergraduate.

Change of Major or Curriculum

Students must have their dean's approval to change to another major within the same College or School. To change Colleges or Schools within the University, students must complete a Change of College/School Form.

Curriculum Model Change

When the University changes a curriculum model, students in the altered curriculum may be required to complete the subjects and hours placed above the level to which they had progressed. They will not, however, be required to complete additional subjects placed in the curriculum below the level they had achieved. Courses shifted from one class level to another

are exempt from this latter provision. Student's deans will determine the revised subject requirements, and the Registrar will determine the revised total hour and grade-point requirements. In no case, however, will the changed curriculum compel students to accumulate additional hours and grade points to graduate.

Student Records

Confidentiality of Student Records

The University recognizes that the maintenance of student information and educational records is necessary and vital to assist the student's education and development and to provide opportunities for University research and policy formulation. The University recognizes its obligation to exercise discretion in recording and disseminating information about students to ensure that their rights of privacy are maintained.

The University will furnish annual notification to students of their right to inspect and review their educational records; the right to request amendment of educational records considered by them to be inaccurate or misleading or that violate privacy or other rights; and of their right to a hearing should the University decline to amend such records. This annual notice will be published in the *Auburn University Bulletin*.

The following guidelines have been developed to ensure the privacy rights of students. For the purposes of this policy statement a student is defined as an individual who has been admitted and has been in attendance in a component unit of the University. Classification as a student in one component unit of the University (e.g., an undergraduate program) does not imply that the person has been accorded the rights outlined below in other component units (i.e., graduate school, professional schools, branch campus).

Student Access to Records

Students have the right to be provided a list of the type of educational records maintained by the University which are directly related to the student; the right to inspect and review the contents of these records; the right to obtain copies of these records; the right to a response from the University to reasonable requests for explanation and interpretation of these records; the right to an opportunity for a hearing to challenge the content of these records; and if any material or document in the educational record of a student includes information on more than one student, the right to inspect and review only the part of such material or document as relates to the student.

Students do not have access to financial records of their parents; confidential letters and statements of recommendation which were placed in the educational record prior to January 1, 1975, provided such letters or statements were solicited or designated as confidential and are not used for purposes other than those for which they were specifically intended; confidential recommendations, if the student signed a waiver of the right of access, respecting admission, application for employment, and the receipt of an honor or honorary recognition.

Students do not have access to instructional, supervisory or administrative personnel records which are not accessible or revealed to any other individual except a substitute; Campus Security records which are maintained apart from educational records, which are used solely for law enforcement purposes, and which are not disclosed to individuals other than law enforcement officials of the same jurisdiction; employment records except when such employment requires that the person be a student; and the Alumni Office records.

Students do not have access to physical or mental health records created by a physician, psychiatrist, psychologist or other recognized professional acting in his or her capacity or to records created in connection with the treatment of the student under these conditions which are not disclosed to anyone other than individuals providing treatment. These records may be reviewed by a physician or appropriate professional of the student's choice.

Procedures for Access

The Registrar's Office has a complete list of educational records maintained by the University which students may obtain. Students should contact the appropriate office to inspect and review their records. An office may require that a University official be present when a student inspects and reviews his or her educational records. Any questions concerning a student's access to records should be directed to the Registrar.

Amending Educational Records

Students may request that any information contained in their educational records which they consider to be inaccurate, misleading, or in violation of their privacy or other rights be amended or deleted from the records. (A grade or other academic scores may not be amended, except that the accuracy of recording the information may be challenged.)

Students who request that information in their records be amended should first direct their request to the official with primary responsibility for the information on the record. If the matter is not resolved to their satisfaction, students should direct their requests to the official's dean or division head. If the matter is not resolved to their satisfaction, they may request a formal hearing.

Right to a Formal Hearing and Procedures for Decision

Students may request formal hearings to challenge information contained in their educational records. The hearing will be held in a reasonable time (not to exceed 45 days) and in a reasonable place. Students may be assisted or represented by persons of their choice, including an attorney, at the expense of the student, and shall be afforded a full and fair opportunity to present evidence relevant to the issue(s).

Students or their representative should request the hearing in writing and should specifically identify the information they seek to have amended. The request should be directed to the Vice President for Student Affairs.

The Vice President for Student Affairs will conduct the hearing and render a decision within a reasonable period of time after the conclusion of the hearing and the decision shall be based solely upon the evidence presented at the hearing. The student shall be notified in writing of the reason(s) for the decision and a summary of the evidence.

If the decision is that the information in the student's educational records is inaccurate, misleading or in violation of his rights and privacy, the statement(s) will be corrected or expunged from the students records.

If the decision is that the information is not inaccurate, misleading, or in violation of the privacy or other rights of the student and that the information or parts thereof are to remain in the student's educational records, the student shall be notified and given the right to enter a statement in the records setting forth any reason for disagreeing with the decision of the Vice President for Student Affairs. This statement shall be maintained in the records as long as the record or contested portion thereof is maintained, and if the contested educational record or contested portion thereof is disclosed by Auburn University to any party, the student's explanation shall also be disclosed to that party.

The Secretary of Education has established a review board to receive complaints regarding violation of student's rights. Students wishing to file a complaint directly to the review board should write to the Family Policy and Regulations Office, Department of Education, Washington, D.C. 20202. Detailed procedures for this complaint procedure are listed under section 99.63 of the regulations issued by the Secretary and will be furnished upon request by the Registrar, Auburn University.

This policy is adopted pursuant to the Family Educational Rights and Privacy Act, (34 CFR Part 99), and is not intended to impose any restrictions or grant any rights not specifically required by this Act.

Release of Directory Information

Directory information may be released by the University without the student's written consent. Directory information consists of student's complete name, local address, parent/spouse address, mailing address, participation in recognized activities and sports, weight and height of members of athletic teams, dates of attendance, degrees and awards received, the most recent previous educational agency or institution attended, and other similar information.

A student may deny the release of directory information by requesting at registration that the information not be released. The student must notify the Registrar's Office in writing each quarter to deny the release of this information. A student may also deny the release of directory information by notifying the University through its World Wide Web access. To deny the release of participation in recognized activities the student must notify the Vice President for Student Affairs and the Academic Dean in writing. To deny the release of athletic information the student must notify the Director of Athletics in writing. A former student, one who is not in attendance, must contact the appropriate offices above to deny the release of directory information.

Release of Educational Records

The University will release a student's educational record(s) upon the student's written request. The student must:

1. Specify the records to be disclosed.
2. Include the purpose or purposes of the disclosure.
3. State the party or parties and the address to whom the information is to be disclosed.

The student shall, upon request, receive a copy of the record that is to be disclosed. It is University policy to furnish single copies of a student's record at no charge except for the standard transcript fee, if applicable.

The University may release student's educational records to the following without prior written consent:

1. University officials who have a legitimate educational interest in the records. University officials are defined as teachers, administrative personnel and other employees except personnel of the security or law enforcement unit of Auburn University who in the performance of their normal duties require access to student records. If University officials are required in the performance of their duties to review the educational records of a student, this will be considered to be a legitimate educational interest.
2. Officials of another school in which the student intends to enroll upon request of the transfer school.
3. Government representatives of the Comptroller General of the United States, the Secretary of Education, the U.S. Commissioner of Education, the Director of the National Institute of Education, the Assistant Secretary for Education, State educational authorities, and State officials to whom such information is specifically required to be reported or disclosed by State law adopted prior to November 19, 1974.
4. Appropriate authorities in connection with financial aid with the understanding that only the necessary records will be released.
5. Organizations conducting studies for, or on behalf of, the University or its agencies for the purpose of developing, validating, or administering predictive tests, administering student aid programs, and improving instruction and student life provided that the studies will not permit the personal identification of students and their parents by individuals other than representatives of the organization and provided that the personally identifiable information furnished will be destroyed when no longer needed for the purposes for which the study was conducted.
6. Accrediting organizations to carry out their accrediting functions.
7. Parents of a dependent student as defined in section 152 of the Internal Revenue Code of 1954. University officials may release educational records to parents on the basis of a written certification from the parent that the student is a dependent as defined under the Code.
8. A court of law to comply with a judicial order or lawfully issued subpoena with the understanding that the student will be notified in advance insofar as possible.
9. Appropriate parties to protect the health and safety of the student or other individuals in emergencies with the understanding that only information essential to the emergency situation will be released, that information will be released only to a party who would be in a position to deal with the emergency, and that the student will be notified insofar as possible of the information released, the purpose for the release, and to whom the information was released.

No personal information on a student will be released without a statement from the University to the party receiving the information that no third party is to have access to such information without the written consent of the student.

Each office with educational records will maintain a record of each request and disclosure of personally identifiable information from the educational records of a student except for information requested in writing by the student, information released to the student or the student's parents, directory information, and information released to University officials and teachers who have a legitimate educational interest in the records. The student may inspect the record of requests, disclosures and the legitimate interests of parties requesting or obtaining information in the appropriate University office.

Special Academic Opportunities

The University Honors Program

The Honors Program at Auburn is part of a long tradition. Swarthmore College established the first honors program in this country in 1922, using as its model the Oxford tutorial system, in which small classes of students and faculty studied the Greek and Latin classics. Other models for honors programs and classes include the Socratic dialogues, the German seminars, and the European guild system.

Drawing on these traditions, the University Honors Program offers gifted Auburn students the advantages of a small school or college in the context of a large University. It is designed for students capable of advanced work, and it provides a unique opportunity for academic excellence. The program selects 180 entering freshmen each year; these students may be enrolled in any College or School of the University which has undergraduate programs or offerings. Students already enrolled at Auburn can also qualify for the Program.

The Honors Center is located in the Ralph B. Draughon Library and houses offices for the director, assistant director and secretary. Broun and Harper halls are the Honors Residence Halls located in the Quad and provide a place for the students to live, learn, and relax together. Computers, typewriters, and reference materials are available in the Honors Student Center in the basement of Broun Hall.

The University Honors Program has two divisions. The curriculum of the lower division consists of honors sections of the required University Core Curriculum courses. Completion of these courses is recognized by a Junior Honors Certificate. The curriculum of the upper division consists of upper-level contract courses (as well as reading/thesis courses for those involved in the thesis option), completion of which is recognized by a Senior Honors Certificate. Students can participate in either or both of these programs. Those who complete both programs with a GPA of 3.4 will graduate as University Honors Scholars. This distinction is noted on students' diplomas and transcripts.

Honors classes are taught in small sections, and are designed to provide for in-depth dialogue and interaction between students and faculty. All honors sections are taught by professorial faculty.

Entering freshmen are introduced to the University Honors Program through the Summer Honors Orientation sessions where introductions to faculty and fellow students are made and friendships begin. Amenities are provided in our Honors Residence Halls to encourage this interaction. The mentor program, organized by upperclass honors students, further assists new students as they adjust to university life. From their second quarter in the program, Honors students are given priority at registration to ensure timely progress through their curricula. Participation in the Honors Lyceum offers students a unique opportunity to focus on such issues as leadership, career planning, creativity, and problem-solving. During their final quarters, Honors thesis students are given library carrel privileges. As an ongoing service Honors students are provided assistance in identifying and applying for scholarships and awards.

Participation in the Honors Program exposes students to a wide range of intellectual and academic experience, gives students the opportunity to form lasting friendships with other students committed to academic excellence, and promotes rewarding interaction between students and teachers. As a result of their special college experience, Honors students have a distinct advantage in their future pursuits, whether they go on to graduate or professional school, or directly into their chosen professions.

Entering freshmen and currently enrolled students who demonstrate the potential for outstanding academic achievement are eligible for admission into the University Honors Program. Selection of incoming freshmen is based on ACT/SAT scores (29/1280 respectively), high school GPA (3.5 minimum), and the candidate's leadership and activities. The selection process is highly competitive; it begins in February each year and continues until 180 spaces are filled. Students currently enrolled at Auburn who have a 3.4 cumulative GPA may also be considered for admission; interested students should contact the University Honors Program office for more information.

The staff of the Honors Program has the responsibility for identifying and developing students to compete for prestigious national and international scholarships (Rhodes, Marshall, Mellon, Fulbright, Rotary, and others). These scholarships have different requirements ranging from a major emphasis on academic achievement to emphasis on all-around ability. Viable candidates must have a 3.6 GPA and have had leadership positions in many extracurricular organizations.

Edgar Gentle, 1978 AU graduate and Rhodes scholar, has pointed out that many Auburn students can compete successfully for these scholarships if they will only take the time to apply and prepare. According to Mr. Gentle, "A Rhodes scholar is a person with a good academic record and a long dossier of extracurricular activities who got lucky. Two or three seniors at Auburn at any given time are on [an] equal plateau [with other candidates nationally]." He feels that all students who get involved in the process benefit, whether they win or not and significantly broaden their understanding. Those who do win one of these scholarships find it to be a life-changing experience.

Honors Study Abroad Program. The University Honors Program provides unique opportunities for academic excellence and enriching experiences. One of these is the Honors Study

Abroad Program. The intention of the Program is to provide the opportunity for Honors students to broaden and deepen their educational and cultural experiences through foreign travel and study. Through this program, Honors students become more aware of the rich, diverse complexity of the broader world. This program enables the students to work within their curriculum and complete Honors courses.

There are opportunities for yearlong study programs through the Honors Junior Year Abroad programs as well as possibilities for term or summer study programs. Information about this program and the participating universities are available at the Honors Center and the Office of International Programs.

The Honors Curriculum. The Honors Curriculum has been developed to provide honors students during their first two years an opportunity for broad, enriching educational experiences, and in their last two years opportunities for more focused and in-depth studies in their chosen discipline. Completion of the requirements for either the Junior or Senior Honors Programs leads to an Honors Certificate; completion of both leads to the designation, upon graduation, of University Honors Scholar.

Junior Honors Program. To receive the Junior Honors Certificate, each student is required to:

1. complete a minimum of 30 credit hours of Honors Core Courses, not including the Honors Writing Seminar or Honors Lyceum, (61 credit hours of core courses are required of all Auburn students),
2. complete the Honors Writing Seminar, EH 118 (5 hours),
3. complete Honors Lyceum (1 credit hour),
4. attend two of the three Honors Convocations each year, and
5. maintain a 3.2 GPA.

Honors Core Courses

U 277	Honors Lyceum.....	1
U 280, 281, 282	Honors Human Odyssey.....	3, 3, 3
EH 118	Honors Writing Seminar	5
EH 281	Honors Great Books Seminar	5
EH 282	Honors Great Books Seminar	5
HY 171, 191 or U 280	Honors History Seminar	3
HY 172, 192 or U 281	Honors History Seminar.....	3
HY 173, 193 or U 282	Honors History Seminar.....	3
MH 172	Honors Calculus	5
CH 172, BI 171, PS 170	Honors Science Seminar	5
CH 173, BI 173, PS 171	Honors Science Seminar.....	5
U 171	Honors Soc. Sci. Seminar: Society, Culture & Environment.....	3
U 172	Honors Soc. Sci. Seminar: Political Economy.....	3
U 173	Honors Soc. Sci. Seminar: The Individual & Society.....	3
MU 172 or TH 270	Honors Fine Arts Seminar	3
PA 220 or 222	Honors Philosophy Seminar	5
EGR 450	Honors Engineering Seminar	5

Senior Honors Program. To receive the Senior Honors Certificate, the student has two options to consider:

1. The Thesis Option: Each student that selects this option is required to
 - a. complete the Advanced Honors Writing Seminar, EH 487 (5 credits),
 - b. complete 4-6 hours of contract courses in their curriculum (300 level or above),
 - c. complete Honors Reading & Special Topics and/or Honors Thesis (3-10 hours),
 - d. complete the upper level Honors Lyceum,
 - e. attend two of the three Honors Convocations each year, and
 - f. maintain a 3.2 overall GPA.

The total credit hour requirement for the Senior Honors Certificate, Thesis Option, is 12-21 credit hours. Some curricula may require a senior project/thesis which may satisfy the Honors Thesis requirement of 3-10 hours.

2. The Contract Option: Each student is required to
 - a. complete the Advanced Honors Writing Seminar, EH 487 (5 hrs.),
 - b. complete 15-16 hours of contract courses in their curriculum (300- level or above),
 - c. complete the upper level Honors Lyceum,
 - d. attend two of the three Honors Convocations each year, and
 - e. maintain a 3.2 overall GPA.

The total credit hour requirement for the Senior Honors Certificate, Contract Option, is 20-21 credit hours.

University Honors Scholar. To graduate as a University Honors Scholar students must complete all of the requirements for the Junior and Senior Honors Certificates (48 to 57 total credit hours), the requirements for their discipline, and have a minimum cumulative grade-point average of 3.4.

Cooperative Education Program

The Cooperative Education program provides opportunities for students to alternate quarters of academic study with experience in industry, business and government agencies.

Coordination of study and work combines theory and practice. As a result students find increased meaning in and motivation for their studies. This experience helps to develop a sense of responsibility, judgment, and maturity. Students also benefit financially, since they are paid for their work.

In four-year undergraduate curricula, the Cooperative Education Program is a five-year plan. A student must complete at least two quarters of the freshman year with an above-average scholastic record before being placed with an employer. Cooperative Education is offered in all curricula of the colleges of Agriculture; Architecture, Design and Construction; Business; Education; Engineering; Liberal Arts; Sciences and Mathematics and in all curricula of the Schools of Forestry and Human Sciences.

A graduate Co-op Program is arranged for certain students in the master's and doctoral programs where employers can provide professional experiences which relate directly to the student's specialized field of study.

Additional information may be secured from the Director, Cooperative Education, 101 Lowder Bldg., Auburn University, Alabama, 36849-5123.

Independent Learning

The Independent Learning program provides undergraduate and non-credit correspondence instruction, designed primarily for persons unable to attend college on a regular basis. Courses are also open to enrolled students with their dean's permission. The credit courses parallel those given in the University, award college credit, and are taught by instructors approved by the relevant academic department. Any person is eligible for enrollment, although enrollment is not equivalent to admission to the University.

Upon registration the student receives a course manual and instructions. The student will be required to do assigned reading, submit written assignments, and possibly do supplemental work. A supervised final examination is given upon completion of all course assignments. Any on-campus student trying to satisfy graduation requirements by independent study must complete all course work and final examinations by mid-quarter prior to graduation.

Although graduate credit cannot be earned by correspondence, certain undergraduate deficiencies may be cleared.

Persons typically enroll in an independent learning course (1) when job or family responsibilities prevent on-campus study; (2) when classroom schedules conflict or a course is unavailable during the quarter it is needed; (3) when a person has been away from formal study for some time and wishes to get back in stride; (4) when a person is away from campus during the summer or while participating in a cooperative education program.

Courses are available from the following fields: biology, economics, film, geography, health, horticulture, mathematics, physical education and recreation, nutrition and foods, political science, law enforcement, psychology, sociology and vocational and adult education.

Fees for independent learning courses are listed under Fees and Charges. See also Credit for. Application forms and a course bulletin are available from Distance Learning, 204 Mell Hall, Auburn University, Alabama 36849-5611, Telephone: (334) 844-5103.

The Study Abroad/Exchange Program

Auburn University students may choose to study abroad in one of the more than 100 programs available in 50 countries around the world. Core, major and elective courses may be offered in English and/or in one of several foreign languages. Programs range in length from one month to a full calendar year. Recommendations, grade point and quality of application are criteria for acceptance into the Study Abroad Program.

The Auburn Abroad registration allows participants to retain AU student status for approved study abroad programs. Under Auburn Abroad, grades and credits are posted on the AU transcript. A prior estimation of credit is obtained and students may apply financial aid to study abroad programs.

The Study Abroad/Exchange Office (201 Hargis Hall) develops programs abroad and directs placement, predeparture, orientation and evaluation processes.

The English As A Second Language Program

The English as a Second Language (ESL) Program offers English language instruction for international students and visiting scholars. The program offers instruction in writing, reading and conversational skills for Auburn University undergraduate and graduate students, as well as international research associates and scholars visiting Auburn. In addition, the ESL program provides assistance in the development of teaching skills to international GTAs. For more information about the ESL program, call the Director of ESL (334) 844-2122.

National Honor Societies

The following members of the Association of College Honor Societies have established chapters at Auburn:

Alpha Delta Mu (Social Work), Alpha Epsilon (Agricultural Engineering), Alpha Epsilon Delta (Pre-Medicine), Alpha Kappa Delta (Sociology), Alpha Lambda Delta (Freshman Scholarship), Alpha Phi Sigma (Criminal Justice), Alpha Pi Mu (Industrial Engineering), Alpha Sigma Mu (Metallurgical & Materials Engineering), Beta Alpha Psi (Accounting), Beta Gamma Sigma (Business), Cardinal Key (Junior Leadership), Chi Epsilon (Civil Engineering), Eta Kappa Nu (Electrical Engineering), Kappa Delta Pi (Education), Lambda Sigma (Sophomore Leadership), Mortar Board (Student Leadership), Omega Chi Epsilon (Chemical Engineering), Omicron Delta Kappa (Student Leadership), Omicron Nu (Home Economics), Phi Alpha Theta (History), Phi Eta Sigma (Freshman Scholarship), Phi Kappa Phi (Senior Scholarship), Pi Delta Phi (French), Pi Lambda Sigma (Pre-Law), Pi Sigma Alpha (Political Science), Pi Tau Sigma (Mechanical Engineering), Psi Chi (Psychology), Rho Chi (Pharmacy), Sigma Delta Pi (Spanish), Sigma Gamma Tau (Aerospace Engineering), Sigma Pi Sigma (Physics), Sigma Tau Delta (English), Tau Beta Pi (Engineering), Tau Sigma Delta (Architecture & Allied Arts), Xi Sigma Pi (Forestry).

National Recognition Societies

The following national societies have chapters established at Auburn:

Alpha Epsilon Lambda (Graduate), Alpha Eta Rho (Aviation), Alpha Kappa Psi (Business), Alpha Phi Omega (Service), Alpha Psi Omega (Theatre), Alpha Tau Alpha (Agricultural Education), Angel Flight (Air Force ROTC Auxiliary), Arnold Air Society (Air Force ROTC), Beta Beta Beta (Biology), Block and Bridle (Animal Husbandry), Delta Nu Alpha (Transportation), Delta Omicron (Music), Delta Sigma Pi (Commerce & Business Administration), Gamma Sigma Delta (Agriculture), Golden Key National Honor Society, Kappa Kappa Psi (Band), Kappa Psi (Pharmacy), Lambda Tau (Medical Technology), National Student Speech, Language, Hearing Association (Communication Disorders), Omicron Delta Epsilon (Economics), Omicron Kappa Pi (Architecture), Order of Omega (Greek Leadership), Phi Delta Kappa (Education), Phi Delta Chi (Pharmacy), Phi Lambda Sigma (Pharmacy), Phi Lambda Upsilon (Chemistry), Phi Mu Alpha (Music), Phi Psi (Textiles), Phi Zeta (Veterinary Medicine), Pi Alpha Xi (Horticulture), Pi Lambda Theta (Education), Pi Mu Epsilon (Mathematics), Pi Sigma Epsilon (Marketing), Scabbard and Blade (Military), Semper Fidelis (Marine Corps ROTC), Sigma Delta Chi (Journalism), Sigma Gamma Epsilon (Earth Sciences), Sigma Lambda Chi (Building Construction), Sigma Theta Tau (Nursing), Sigma Xi (Scientific Research), Society for Technical Communication (Liberal Arts), Steerage (Navy ROTC), Tau Beta Sigma (Band), Upsilon Pi Epsilon (Computer Science).

Financial Information

Fees and Charges

Auburn University's fees have remained somewhat lower than those charged by similar institutions in the Southeast and in other sections of the country. As institutional costs have risen, small increases in fees have been authorized from time to time by the Board of Trustees. Every effort is made, however, to hold fees and charges at a minimum.

The following fees and charges are in effect at this time. However, since the catalog must be published well in advance of the next school year, it is not always possible to anticipate changes. Thus the fee schedule may have to be revised. Every effort will be made to publicize changes as far in advance as possible.

Basic Quarterly Charges

Students should be prepared to complete registration by payment of fees and charges, upon notice, prior to the beginning of the quarter.

Graduate & Undergraduate	Ala. Students	* Non-Ala. Students
1. University Fee - 10 to 15 credit hours (all except Veterinary Medicine, Architecture & Pharmacy) (a.)	785.00	2,355.00
2. University Fee - Veterinary Medicine *** (a)	1,500.00	** 4,500.00
3. University Fee - Architecture *** (a)	1,200.00	3,600.00
4. University Fee - Pharmacy *** (a)	1,500.00	4,500.00
5. Fee for each credit hour over 15 hours in addition to 1 through 4 above.	26.00	78.00
6. Registration Fee (Less than 10 hours) (b.)	135.00	405.00
7. Credit Hour Fee (Less than 10 credit hours) (except Vet. Med., Arch. and Phar.) (b.)	65.00	195.00
8. Credit Hour Fee - Vet. Med.*** (b)	137.00	411.00
9. Credit Hour Fee - Arch.*** (b)	107.00	321.00
10. Credit Hour Fee - Phar.*** (b)	137.00	411.00
11. Auditing Fee (c.)	65.00	195.00
12. Clearing for Graduation (d.)	135.00	405.00
13. Music Fee (per applied course) (e.)	80.00	80.00
14. Computer Literacy (U 135)	22.00	22.00
15. Flower Arranging (HF 225)	74.00	74.00
16. Field Laboratory Courses - Off Campus Program (f.)		
a. Service Fee	135.00	405.00
b. Per Credit Hour Fee	65.00	195.00
17. Correspondence Study Course Fee (g.)		
a. Service Fee	17.00	17.00
b. Per Credit Hour Fee	42.00	42.00
18. Engineering Fee (Per Credit Hour)	5.00	5.00
19. College of Business Fee (Per Credit Hour)	5.00	5.00
20. College of Sciences & Mathematics Fee (Per Credit Hour - 500-level courses and below)	5.00	5.00

* Non-Alabama fees shall not apply to Graduate Teaching Assistants, Graduate Research Assistants and Graduate Assistants, on a one-fourth time or greater appointment in the University. These shall pay fees as Alabama students when appropriate certification is furnished by the Registrar by the fifth class day of the quarter.

** Only \$1,500.00 for SREB students.

*** Professional Program.

(a.) The University Fee is used to meet part of the cost of instruction, physical training and development, laboratory materials and supplies for students use, maintenance, operation, and expansion of the physical plant, Library and Student Activities.

The Student Activities portion of the fee supports such activities on campus as intercollegiate athletics, exhibits, GLOMERATA, intramural sports, PLAINSMAN, religious life, bus service, social affairs, student government, student union activities and operations, TIGER CUB, and WEGL Radio Station. This fee includes 25 cents held in reserve to cover unnecessary damage to University property by students.

(b.) Students registering for fewer than 10 credit hours will pay the Registration Fee plus the Credit Hour Fee for each credit hour. (Students who register for 10 or more hours will pay the

University Fee.) The Registration Fee is remitted to full-time faculty and staff. All students except faculty and staff are eligible to participate in Student Activities.

- (c.) Any student who pays less than full fees must pay this fee for auditing a course. (Not charged to faculty and staff.)
- (d.) A student who is a candidate for a degree in a quarter in which no credit work is taken is required to register in such quarter as a prerequisite to graduation. (For members of the faculty and staff the charge shall be reduced to \$5.00.) Graduation fee is to be paid in addition to this charge.
- (e.) This additional music fee to be paid for each Performance Course of individual instruction. Instruction is available in one hour or two half hour lessons per week.
- (f.) Students registering for Field Laboratory Courses or off-campus courses will pay the Service Fee plus the additional fee per credit hour. Students participating in the Study Abroad/Exchange Program will pay the off-campus courses Service Fee, and any course work resulting in AU credit or grades will be assessed in accordance with the University fee structure.
- (g.) Students registering for Correspondence Study Courses will pay the Service Fee plus the additional fee per credit hour. Special Lab Fees may be associated with certain courses.

Other Fees & Charges

Late Payment Charges

All students, regardless of classification, must clear tuition, fees and other University obligations by the deadlines set by the University, or be liable for late payment charges. Late payment charges are assessed following each payment due date based on the following schedule:

Amount Past Due	Late Payment Fee
Less than \$10	\$1
\$10 or more up to \$100	\$10
\$100 or more	\$25

Late Registration Fee 50.00

Applicable for currently enrolled students who fail to register during the University registration period for the term for which they are registering late.

Reinstatement Re-enrollment Fee (after disenrollment) 60.00

Achievement Certificate Fee 10.00

Application Fee

The application fee must accompany all applications for admission. Not refundable nor applicable to registration fees. (see section on Admissions.) An application fee must accompany the application for housing and is not refundable or applicable to housing fees. (see section on housing.)

Duplicate Diploma Fee 20.00

Doctoral Dissertation Microfilming Fee 55.00

Equivalency Examination Fee (GED) (each) 20.00

Thesis and Dissertation Binding Fee (per copy) 7.00

Three to five copies usually required.

Graduation Fee (each degree) 20.00

Payment of graduation fee is due by the due date of bill on which it is charged.

Internships

Agriculture AEC 399, ADS 495, AY 390, ENT 491, FAA 315, HF 330, PH 402

Business AC 400, EC 400, FI 400, MN 400, MT 400

Communication COM 639, RTF 439, PRC 439

Communication Disorders CD 658, 668

Criminal Justice CJ 464

Foreign Language International Trade FL 499

Journalism JM 425

Political Science PO 450

Zoology ZY 490

Fees will be one-half the full University Fee or one-half of the non-Alabama University fee, if applicable. Total course load not to exceed 9 credit hours.

Rent for Student Housing, (see section on Housing and Residence Life)

Meal Plans (See section on Food Services under Student Services and Programs.)

Registration fees for sponsor billing;

To Trust Funds, companies, or other sponsors

5.00

Charge for returned check	20.00
Notice: ALL CHECKS ARE ACCEPTED SUBJECT TO COLLECTION	
Special Service Fees	
Cooperative Education Program	30.00
Cooperative Education ID Fee	
(Applicable to co-op students who order athletic tickets at the student rate)	21.75
Internship Fee-Veterinary Medicine	15.00
Transcript Fee	3.00

Registration Fee Cancellations or Refunds

Registration Fee Cancellations or Refunds for Resigning from All Classes. Students officially resigning prior to the start of a quarter will not be held liable for fees (other than non-refundable fees). Students resigning during the first 10 days of class will be charged a \$100 Resignation Fee.

The liability for fees will not be excused for resignations effective after the 10th class day except in cases of resignation caused by personal illness (physicians statement required) or call into military service (copy of activation orders required, excluding temporary training assignments). A pro-rata reduction will be made in cases of personal illness and a full reduction for military service activation. Students having made prior payment will be refunded the amount paid less their liability after the resignation. Students suspended for disciplinary reasons are not eligible for refunds or reductions in liability. Resigning students receiving refunds will first have their refunds applied to any outstanding obligations and to any scholarship, grant or loan which they had received for the quarter.

Partial Refunds on Withdrawal from Courses. Students reducing course loads on or prior to the 10th day of classes may be eligible for a partial refund or reduction in liability of tuition and fees. To be eligible, the adjustment must be completed on or before the 10th day of classes. In such cases, fees will be reassessed based on the adjusted schedule.

A pro-rata refund policy will be in effect for those students receiving federal financial aid and attending Auburn University for the first time, and will be provided up to the 60 percent point of their first quarter. An administrative fee of the lesser of \$100 or 5 percent of charges will be deducted from the refund.

An additional refund policy is applicable to all students receiving federal financial aid. A refund calculated using the University's refund policy will be compared to a refund calculated using federal regulations. The student will receive the larger amount.

Appeals. Students who believe that extenuating circumstances warrant an exception to the refund policy must submit an appeal in writing to the Director, Office of Bursar, Quad Center. Acceptance or rejection of the appeal will be mailed within 10 business days.

Payment of University Obligations

The Auburn University Billing/Receivable System will bill students by mail for the majority of their charges due AU. Among the charges included within this system are those for tuition/fees, Tiger Cub, housing and parking. Other charges will be included in the system as deemed appropriate. Charges not included within this system will be billed by the department which generated the charge. Any questions concerning a charge should be directed to the department responsible for that particular charge.

AU Billing/Receivable statements will be mailed at approximate monthly intervals corresponding to the University's quarterly schedule. Tuition and fees resulting from University registration will be billed within a week of the end of registration, with payment due approximately three weeks later. Additional charges will be billed as incurred. All charges appearing on a billing statement must be cleared by the due date for that statement or late payment charges will be assessed. Late payment charges may be waived for tuition resulting from University registration and housing charges when financial aid is processed through the University and evidence of such aid is recorded on the statement.

AU Billing/Receivable statements will be mailed to the student's mailing address (as maintained by the Registrar's office) unless the student directs otherwise. Students may request that all billing correspondence be sent to a specified address by contacting the Bursar's Office.

Students are expected to meet all financial obligations when they fall due. The University reserves the right to deny admission, dis-enroll, prevent participation in graduation and withhold transcripts, cap, gown and diploma of any student who fails to meet promptly their financial obligations.

gations to the University. It is each student's responsibility to be informed of all payment due dates, deadlines, and other requirements by referring to official sources of University information such as this catalog, official calendar of events, announcements printed in the *Plainsman*, or that disseminated by other means from time to time. Students owing charges for prior quarters will not be allowed to register for future quarters until all charges are paid. Enrolled students who do not register during the University registration period will be liable for late registration charges.

University registration or other requests for class assignment create a liability for the payment of tuition and fees resulting from assigned classes. Such liability can only be excused when students withdraw or resign in accordance with University procedures.

Checks: Checks given in payment of any University obligation are accepted subject to final collection. If the bank on which the check is drawn does not honor the demand for payment and returns the check unpaid, the student will pay a returned check fee of \$20 and any applicable late payment charges. If payment is not cleared promptly, the student's registration may be canceled. The University has the right but not the obligation to redeposit any insufficient check without notice to the student or maker.

Collection costs or charges along with all attorney fees necessary for the collection of any debt to the University will be charged to and paid by the debtor.

Veterans: All veterans (Chapters 30 and 32), reservists and guard members (Chapter 106) and veterans' dependents (Chapter 35) are responsible for paying fees and charges on the same basis as other students. Veterans under the Vocational Rehabilitation program (Chapter 31) and students receiving the Alabama GI Bill should make arrangements for their tuition, fees and books to be paid prior to their first payment due date.

Foreign Students Under Contract: A special administration management/program fee will be negotiated for foreign students who come to the University under a contractual arrangement that requires special administrative and programming arrangements beyond those of the regular academic program of the University.

Alabama and Non-Alabama Student Policy

For Students Enrolled before June 1, 1996

For the purpose of assessing fees, applicants shall be classified as Alabama or non-Alabama students. Non-Alabama students are required to pay a non-resident tuition fee.

An Alabama student is a person who shall be a citizen of the United States or a resident alien and who shall have resided and had habitation, home, and permanent abode in the State of Alabama for at least 12 months immediately preceding current registration. In applying this regulation, applicant shall mean a person applying for admission to the institution if applicant is married or 19 years of age, or, otherwise, it shall mean parents, parent or legal guardian of his or her person. If the parents are divorced, residence will be determined by the residency of the parent to whom the court has granted custody.

A person who establishes a guardianship for purpose of avoiding non-Alabama fees will be subject to non-resident tuition.

In the determining of an Alabama student for purposes of assessing fees, the burden of proof is on the applicant.

Additional Persons Eligible for Resident Tuition

1. Military personnel on active duty stationed in Alabama and their dependents (as defined by Internal Revenue Codes) as well as military personnel whose Home of Record is Alabama and their dependents.
2. Non-resident graduate students who have been awarded full academic, athletic or other similar performance tuition scholarships by Auburn University and non-resident graduate students who hold assistantships of 1/4 or more appointments.
3. Full-time employees of a State of Alabama agency or institution and their spouses and/or dependent children.
4. Persons who are dependents of a non-resident employed in Alabama full-time for at least one year prior to registration and who have filed an Alabama Income Tax Return for the tax year prior to the year in which the student is admitted and did not claim a credit on the Alabama return for income taxes paid to another state.
5. Non-resident students enrolled in programs included in the Southern Regional Education Board Academic Common Market provided the student does not change to another program not included. In such cases of change the student will be classified as a non-resident for tuition purposes.

6. Persons whose spouses by legal marriage are bona fide Alabama residents.
7. Dependents and spouses of persons who establish domicile within the State and who are employed full-time in a permanent position in the State.
8. Non-resident persons enrolled in programs of Auburn University not funded by tax revenues of the State of Alabama may be exempted from non-resident tuition.

Initial Determination of Eligibility

In order to be initially classified as eligible for resident tuition, students must demonstrate that they or their parent, guardian or spouse qualify for one of the eligibility categories prior to the first day of class. A signed statement is required that qualification for the eligibility category claimed has been met prior to registration.

Change in Eligibility for Resident Tuition

Students determined to be eligible for resident tuition will maintain that eligibility upon re-enrollment within one full academic year of their most previous enrollment unless there is evidence that the student subsequently has abandoned resident status, e.g., registering to vote in another state. Students failing to re-enroll within one full academic year must establish eligibility upon enrollment.

Students initially classified as ineligible for resident tuition will retain that classification for tuition purposes until they provide documentation that they have qualified for resident tuition. The burden of proof of change in eligibility rests on those requesting change. Evidence relevant to an initial determination of eligibility is also relevant to establishing a change in eligibility.

Non-resident students who carry an academic load normal (10 or more hours) for students at Auburn University will be presumed to be in the State primarily for the purpose of gaining an education. Clear and convincing proof may overcome this presumption, but again, the burden of proof rests on those requesting change in eligibility. Any change in resident tuition eligibility occurring during an academic term will not become effective until the registration for the succeeding term.

The following types of evidence may contain data to establish twelve (12) month residency in the State. At least five of the nine criteria must be met. In all cases the person must be at least 19 years of age or married; otherwise, the person's residency will be based on that of the parent or guardian.

1. Ownership of residential property and other real property in the State or continuous occupation or renting of an apartment, house or other residential space in the State on an extended term of not less than twelve months.
2. Full-time permanent employment in the State.
3. Possession of State Licenses required to do business or practice a profession in Alabama.
4. Marriage to a bona fide Alabama resident.
5. Location of voting registration.
6. Filing Alabama resident tax returns.
7. Current Alabama drivers license
8. Alabama vehicle title registration and payment of property taxes.
9. Evidence of local banking activity for 12 consecutive months prior to making application for residency change.

The Registrar at the respective Auburn University campus shall have the responsibility for determining whether a student shall be classified as an Alabama or non-Alabama student. The decision of the Registrar shall be subject to review by the President (at Auburn) or the Chancellor (at AUM) or the designated representative of each upon written request of the applicant.

Policy for Students Enrolled for the First Time June 1, 1996, and Thereafter

For the purpose of assessing fees, applicants shall be classified as Alabama or non-Alabama students. Non-Alabama students are required to pay a non-resident tuition fee.

An Alabama student is a person which shall be a citizen of the United States, or a resident alien, and who shall have resided and had habitation, home and permanent abode in the State of Alabama for at least 12 months immediately preceding current registration. In applying this regulation, "applicant" shall mean a person applying for admission to the institution, if applicant is married or 19 years of age, and financially independent. Otherwise, it shall mean parents, parent or legal guardian of his/her person. If the parents are divorced, residence will be determined by the residency of the parent to whom the court has granted custody.

A person who establishes a guardianship for purpose of avoiding non-Alabama fees will be subject to non-resident tuition.

No person who moves to Alabama for the primary purpose of attending college shall be considered to have demonstrated intent to establish domicile in the State of Alabama, and will generally not be considered eligible for classification as a resident student. Clear and convincing evidence to the contrary must be presented to overcome this presumption.

In determining Alabama student status for purposes of assessing fees, the burden of proof is on the applicant.

Additional Persons Eligible for Resident Tuition

1. Military personnel on active duty stationed in Alabama, their spouses and dependent children (as defined by Internal Revenue Codes), as well as military personnel whose "Home of Record" is Alabama, who have continuously filed Alabama income tax returns for the duration of their service, and their spouses and dependent children.
2. Non-resident graduate students who have been awarded full academic, athletic or other similar performance tuition scholarships by Auburn University and graduate students appointed on assistantships of at least 1/4-time.
3. Full-time employees of a State of Alabama agency or institution, their spouses and dependent children.
4. Spouse and dependent children of a non-resident, provided the non-resident has been employed in Alabama full-time for at least 12 consecutive months prior to registration, has filed an Alabama Income Tax Return for the tax year prior to the year in which the student is admitted, and did not claim a credit on the Alabama return for income taxes paid to another state.
5. Non-resident students enrolled in programs included in the Southern Regional Education Board Academic Common Market, provided the student does not change to another program not included. In such cases of change the student will be classified as a non-resident for tuition purposes.
6. Persons whose spouses by legal marriage are bona fide Alabama residents.
7. Spouses and dependent children of persons who establish domicile within the State of Alabama, provided that the person who establishes domicile is employed full-time in a permanent position in Alabama.
8. Non-resident persons enrolled in programs of Auburn University not funded by tax revenues of the State of Alabama.
9. Students enrolled in the College of Veterinary Medicine professional D.V.M. program admitted under contract with the Southern Regional Education Board.

Initial Determination of Eligibility

In order to be initially classified as eligible for resident tuition, students must demonstrate that they or their parent, guardian or spouse qualify for one of the eligibility categories prior to the first day of class. A signed statement is required that qualification for the eligibility category claimed has been met prior to registration.

Change in Eligibility for Resident Tuition

Students determined to be eligible for resident tuition will maintain that eligibility upon re-enrollment within 12 months of their most recent enrollment, unless there is evidence that the student subsequently has abandoned resident status (e.g., registering to vote in another state.) Students failing to re-enroll within 12 months must establish eligibility upon re-enrollment.

Students initially classified as ineligible for resident tuition will retain that classification for tuition purposes until they provide clear and convincing evidence that they have established permanent domicile in Alabama. The burden of proof of change in eligibility rests on those requesting change. Evidence relevant to an initial determination of eligibility is also relevant to establishing a change in eligibility.

Non-resident students who carry an academic load considered normal (10 or more hours per term) for students at Auburn University will be presumed to be in the State of Alabama primarily for the purpose of gaining an education and, thus, have not demonstrated the intent to establish a true domicile in Alabama. Clear and convincing proof may overcome this presumption, but again, the burden of proof rests on those requesting change in eligibility. Any change in resident tuition eligibility occurring during an academic term will not become effective until the registration for the succeeding term.

The following types of evidence may contain data to establish twelve 12-month residency in the State of Alabama. In all cases, the person must be at least 19 years of age or married, and financially independent. Otherwise, the person's residency will be based on that of the parent or guardian.

1. Ownership of rental or residential property in the State of Alabama and continuous occupation thereof on an extended term of not less than twelve consecutive months.
2. Full-time permanent employment in the State of Alabama.
3. Possession of State of Alabama License(s) required to do business or practice a profession in Alabama.
4. Legal marriage to a bona fide Alabama resident.
5. Registration to vote in the State of Alabama.
6. Filing of Alabama resident income tax returns.
7. Holding a current Alabama drivers license
8. Registration of vehicle in Alabama, and payment of property taxes, thereon.
9. Evidence of local banking activity within the State of Alabama for 12 consecutive months prior to making application for residency change.

The Registrar at Auburn University and the Director of Admissions at AUM shall have the responsibility for determining whether a student shall be classified as an Alabama or non-Alabama student. The decision of the Registrar/Admissions Director shall be subject to review by the President (at Auburn) or the Chancellor (at AUM) or the designated representative of each, upon written request of the applicant.

Academic Common Market

The Academic Common Market is an agreement among 14 Southern Regional Education Board states (Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, Oklahoma, South Carolina, Tennessee, Texas, Virginia and West Virginia). The agreement is that if one of these states does not offer a particular degree program in its state-supported universities, a resident of that state may enroll in that degree program at a university in one of the other states without having to pay out-of-state tuition. Each state specifies which programs in out of-state universities it will allow its residents to attend as common market students. Common market students at Auburn must be certified residents of one of the other states, and they must be enrolled in degree programs agreed to by their home states. Auburn students who enter as common market students and later change to a degree program not certified as eligible by their home states lose the waiver of out-of state tuition when they discontinue taking courses in the certified program. Since out-of-state residence is a requirement for being a common market student, students may not use the time spent as common market student to qualify them as residents of Alabama. Further information about the Academic Common Market is available from the Provost's Office, 209 Samford Hall (334) 844-5779.

Financial Aid

The Office of Student Financial Aid at Auburn University provides financial assistance to students who need aid in order to attend the University. The University believes that the amount of aid granted should be based on financial need. Students seeking assistance are required to file an application for Federal Student Financial Aid annually. Applications for aid should be completed in January or February of the year prior to the academic year in which the student will need assistance. Application materials and a brochure describing available aid programs may be obtained from the Office of Student Financial Aid, 203 Martin Hall.

The financial aid which students may receive includes scholarships, grants, loans and part-time employment.

Scholarships may be awarded to undergraduates who have shown high academic attainment and promise. Some scholarship programs also require a demonstration of financial need. Federal Pell Grants are provided to undergraduate students who demonstrate exceptional need. Federal Supplemental Educational Opportunity Grants are available, in limited number, to undergraduates with financial need.

Loans. Federal Perkins Loans, William D. Ford Direct Loans, and Institutional Loans provide long-term, low interest loans to students. Some loans require demonstrated financial need.

The Federal College Work-Study Program provides part-time employment for students who demonstrate financial need. The Health Professions Loan Program makes available long-term loans for students in Pharmacy and Veterinary Medicine.

Graduate Assistantships. Graduate students may be eligible for teaching and research assistantships and traineeships. Information is available from the department of the students major field.

Student Employment. Students seeking part-time employment while attending the University should contact the Student Employment Service. As a referral agency, the service assists

students in finding employment on campus. Jobs are made available on a first-come, first-served basis and are dependent upon the skills of the applicant.

Auburn University employs more than 4,500 students on an hourly basis. The number of hours a student may work is dependent upon hours enrolled, but usually ranges from 10-30 hours per week.

More information is available from Student Employment Service, 300 Martin Hall.

Student Services

THE DIVISION OF STUDENT AFFAIRS, under the direction of the Vice President, administers services and programs for students, faculty, staff, and alumni. Departmental areas within this division include Admissions, Foy Union, Freshman Experience, Recreational Services, Registrar, Special Programs, Student Life, Career and Student Development Services, Student Financial Aid, and Student Health Services.

Housing and Residence Life

Auburn University offers a variety of on-campus housing accommodations for students. There are 23 residence halls and 398 apartments to house single undergraduate students. There are 124 apartments available for married and graduate students. All facilities are convenient to classrooms, laboratories, libraries, cafeterias, laundries, mail rooms and recreational areas.

Residence Halls and Single Student Apartments

Apartments for single students are located in a section of Caroline Draughon Village and the Extension. The residence halls, with the exception of Noble Hall located on West Magnolia Ave., are clustered in two areas on the campus.

The Quadrangle Community consists of: Elizabeth Harper Hall, Helen Keller Hall, Mary Lane Hall, Kate Teague Hall, Kate Conway Broun Hall, Marie Bankhead Owen Hall, Ella Lupton Hall, Letitia Dowdell Hall, Willie Little Hall, Allie Glenn Hall

The Hill Community consists of: Mollie Hollifield Hall, Stella Knapp Hall, Dixie Graves Hall, Zoe Dobbs Hall, Annie Smith Duncan Hall, Mary Boyd Hall, Camille Early Dowell Hall, Berta Dunn Hall, Marguerite Toomer Hall, Sara Sasnett Hall and two new halls, L and M.

Single student housing includes the following types of living options:

The Hill: (women) air-conditioned suites consisting of two double rooms (two rooms with two students sharing each room) with connecting bath: \$620 per student per quarter. Single rooms (smaller rooms with private bath) are available: \$720.

The Quad: (men and women) suites consisting of two double rooms with connecting bath: air-conditioned, renovated \$620 (double) and \$720 (single) per student per quarter; air-conditioned, unrenovated \$580; not air-conditioned \$505. The Quad residence halls are: Men – air-conditioned, Lane; no air-conditioning, Glenn. Women – air-conditioned, Lupton; no air-conditioning (freshmen only), Keller, Owen and Dowdell; Also in the Quad are the Honors Halls, Harper and Broun, housing both male and female Honors and academically-talented students. Harper and Broun are air-conditioned and renovated, and rent is \$620 per student per quarter.

Keller and Owen halls are undergoing renovation.

Noble Hall: (coed) air-conditioned, single (one person) rooms with microfridges (combination refrigerator/freezer/microwave units); community baths on each floor; common lobby area joins men's and women's wing: \$570 per quarter.

The Extension (CDV Extension Apartments): All utilities except phone. Two-bedroom air-conditioned, furnished apartments housing four students: \$509 per quarter per student.

The Village (CDV): See description under Married and Graduate Students.

The rents listed above are subject to change. Any rate increase will be announced prior to the cancellation date for the quarter the Housing Agreement takes effect.

Students must contact the Division of Telecommunications/ETV at (334) 844-0119 for telephone service.

Housing units designed to accommodate students with disabilities are provided in certain campus residence halls and in 14 apartments at the Extension. These facilities include wheelchair ramps, specially designed bathrooms and modified furnishings.

Residents' rooms are furnished with single beds, study desks, mirrors, chest of drawers, chairs, and closets. Residents may bring other furnishings including study lamps, linens,

curtains or drapes, rugs or carpet, book shelves, radios, stereos, television sets, plants, posters and small refrigerators. Residents are encouraged to bring room fans for non-air-conditioned halls, but room air-conditioners are not allowed. Most residence halls have kitchens for use by the occupants and lounges for entertaining or watching television.

Apartment communities for single students (Caroline Draughon Village and the Extension) are within walking distance of all classroom buildings and recreation and sports facilities. Extension apartments feature all-electric kitchens with eating area, two bedrooms for four students, and a bathroom. Students bring their own linens, dishes, utensils and other items to personalize and clean their apartments. Basic TV cable service is included in the rent. Ample parking areas are located adjacent to each building. Laundry facilities, TV room, study lounge, large activities room and a convenience store/deli are located within the complex.

Harper and Broun halls serve as the Honors Center and Residence Halls, housing male and female honors and non-honors students. Students who have been accepted in the Honors Program and other students must specifically request Harper or Broun on the Housing Application.

The Caroline Draughon Village Community consists of one and two-bedroom apartments. Undergraduates (including freshmen), graduate and married students, live in the Village.

Married and Graduate Students

Apartments for married and graduate students are located in a section of the Caroline Draughon Village. These apartments are grouped in two-story brick buildings of 8, 16 and 20 units. Each apartment has a separate outside entrance. The apartments feature all-electric kitchens, furnished living/dining rooms and bedrooms, closets, cabinets and baths with shower-tub combinations. A limited number of unfurnished apartments is available. Monthly rent includes heat, water, solid waste disposal, sewage, garbage pickup and TV cable. Electricity and telephone charges are the responsibility of the resident. Residents must contact Telecommunications/ETV (844-0119) for telephone service and Alabama Power (821-7204) about electricity in the Village.

The Village (Caroline Draughon Village): phone and electricity not included.

Two-bedroom (rates are per apartment per month. If roommate is required, roommates split the rent. Undergraduates, graduates, single and married students): Window a/c unit – \$300 furnished; \$289 unfurnished. Renovated (carpet, microwave, newer ceilings and kitchen units) – \$328 furnished only. Central a/c unit – \$355 furnished; \$344 unfurnished.

One bedroom (rates are per apartment per month. Single undergraduate or graduate students (no roommates permitted), married couples and single parents with one child pay these rates: Window a/c unit – \$650 furnished; \$625 unfurnished. Renovated (carpet, microwave, newer ceilings and kitchen units) – \$690 furnished only.

The rents listed above are subject to change. Any rate increase will be announced prior to the cancellation date for the quarter the lease is to begin.

A reservation in University Housing is not valid unless the applicant has been admitted to Auburn University.

Admission to Auburn University does not automatically include a space in University Housing. It is the responsibility of the student to make housing arrangements either on or off campus. Housing information is sent to entering students with their provisional acceptance to the University.

Students may apply for a living space by submitting a Housing Application/Agreement processing fee. Priority for housing is based upon the date of application and the number of quarters applied for.

The Housing Application and Agreement, when accepted, will be for a living space (apartment only, if married) in University Housing. In order to make a reservation, the Housing Application and Agreement must be returned to the Housing Office in Burton Hall by the appropriate deadline with \$115 for the housing deposit (\$100) and the application fee (\$15). The deposit is a combination room reservation/damage/room clearance deposit and is not applicable to rental payment, except on cancellation as provided within the Housing Agreement. The Housing Agreement outlines conditions under which refunds may be made.

University Housing officially opens for occupancy on the day preceding registration and schedule adjustment, and closes and must be vacated by the day following graduation each quarter. Residence halls do not remain open during Thanksgiving and Christmas breaks.

Rent for spaces/apartments in Caroline Draughon Village and Extension apartment communities includes holidays and between quarter breaks.

Paraprofessional Staff

Each living area is staffed with graduate-level Hall Directors and undergraduate Resident Assistants (RAs). These student advisors are selected from a large pool of applicants for their ability to effectively meet the needs of residents. They undergo an extensive training program, and are responsible for implementing cultural, recreational and educational activities and enforcing University Housing regulations. Typical activities include a faculty lecture series, study skills seminars, health and safety programs, computer instruction, peer tutoring, exercise classes, intramural sports activities, cookouts, dances and movies.

Resident Involvement Opportunities

Each hall and apartment community has a Hall Council comprised of elected residents. Hall Councils coordinate, in conjunction with staff, special educational, social, cultural and recreational activities for residents. The Residence Hall Association, made up of all on-campus residents, also plans and conducts activities and communicates residents' suggestions and concerns to the Housing and Residence Life administration.

Off-Campus Housing

Privately-owned dormitories, fraternity houses, apartments, duplexes, houses and mobile homes provide housing for students in the greater Auburn-Opelika community.

The University neither inspects nor approves off-campus housing. However, the facilities must conform to federal regulations and to the local code of health and safety regulations.

A listing of off-campus housing facilities may be obtained by writing the offices of Housing and Residence Life, Admissions or Student Affairs.

Food Services

Auburn University Food Services is a non-profit organization supported entirely by food sales in the various Food Services operations located on campus. The individual operations, varying in size and composition, offer a wide variety of services to meet the needs of students, as well as faculty, staff, and visitors to the Auburn campus. All services offered to students are strictly on a voluntary basis and are available to students living both on and off campus. A brief synopsis of each unit's location and services follows:

War Eagle Food Court, in Foy Union, offers a wide variety of food choices for breakfast, lunch, dinner and evening study breaks. The War Eagle also houses the University Faculty Club and is responsible for all campus catering.

Terrell Dining Complex, in the Hill residence hall, offers a variety of dining options including a traditional cafeteria line, an open-late snack bar, our **Hill Restaurant** and our **Li'l Eagle** convenience store.

The Village Kitchen, in the CDV Extension apartment village, is a fully stocked on-campus grocery convenience store featuring a take-out snack bar and late hours.

Take Ten, on the ground floor of Haley Center, is a contemporary fast-food operation featuring chicken breast sandwiches, chicken fingers, broiled sirloin burgers, fries, salads and beverages. Perfect for between class meals!

Dow-Deli, on the ground floor of the Quad's Dowdell Hall, offers deli and convenience store items featuring make-your-own pizzas and sandwiches.

Sewell Cafeteria, adjacent to Sewell Dormitory, is a buffet cafeteria operated by Food Services for the residents of the Sewell Dormitory.

Meal Plan - The Chef's Club - Students may become members of the Chef's Club, Food Services meal plan. As members of the Chef's Club, students may choose between a pre-payment plan or a charge plan. The pre-payment plan or "declining balance plan" allows the student to pay in advance, and budget that amount through the quarter. The charge plan offers students the convenience of charging their meals in any of the food service operations located on campus. There is a yearly membership fee for students joining the charge ascending plan.

Students may receive credit approval by furnishing a parent's notarized signature as co-signer or by furnishing two credit references. Chef's Club charges are billed on a monthly basis and the total amount must be paid in accordance with the Bursar's billing schedule.

Many students who join the Chef's Club have a charge account for the first time. Chef's Club card holders need to be aware that charges can accumulate rapidly and all charges have to be paid. However, students soon learn that, with common sense and discretion, having a Chef's Club card can be both fun and educational.

Additional information about the Chef's Club may be obtained from The Tiger Club Accounts, located in the Food Service Administration Building, Auburn University, Alabama 36849, Telephone: 844-1220.

Cash is accepted at all food operations located on campus. However, one advantage of a Chef's Club card or meal plan is that the student does not have to worry about carrying cash at all times during the quarter.

Student Health Services

Auburn University Medical Clinic is committed to providing a full range of primary care services for Auburn students including initial diagnostic services for illnesses and injuries, immediate and follow-up assessment and treatment for most short-term illnesses and preventative care services, including immunization and women's health services. Services are provided on an appointment basis. Walk-ins will be evaluated and given appointments or seen immediately based on the urgency of the problem or condition. The newly-renovated facility includes laboratory, X-ray and pharmacy services. The clinical staff consists of fully licensed and credentialed physicians, nurse practitioners, registered nurses, technicians and other support staff. Services are provided on a fee-for-service basis with on-site billing services provided to students to facilitate insurance reimbursement. Major credit cards are accepted and payment plans are available. Services are available to all Auburn students, spouses and dependents.

Specialty Student Health Services:

Allergy and Immunization Services: Allergy injections are administered at the direction of the student's own physician or allergist. The student must provide both medication and instructions. Preventative immunization services are also available to include Measles, Mumps and Rubella (MMR), Mantoux (PPD), Hepatitis B and Influenza (Flu) vaccinations.

Women's Health Services: Provides assessment and treatment of women's sexual health issues, contraceptive services and annual physical (pelvic) examinations. Educational and counseling is also routinely provided in support of the clinical services.

Laboratory Services: A CLIA-certified moderate complexity laboratory is provided for diagnostic testing in support of clinical diagnosis and treatment.

X-Ray Services: On-site radiology services are available.

Pharmacy Services: Pharmacy services are available in the facility where student prescriptions can be filled at competitive prices.

Student Insurance: The Student Government Association (SGA) sponsors an Accident and Sickness insurance plan which is available to registered undergraduate and graduate students, spouses and dependents. The plan provides maximum coverage at reasonable premium rates. Coverage is provided for services at the Auburn Health Center, including physician visits, laboratory and x-ray services. The SGA-sponsored insurance plan or its equivalent is required for all international students and recommended for all students.

Hours of Operation: Monday-Friday 8 a.m. to 4 p.m.; Closed Saturdays and Sundays.
To make an appointment, call 844-4415.

Student Success Center

The Student Success Center consists of four major program areas that follow a student from the time they attend orientation as an incoming freshman to the time they are assisted in being placed in a job upon graduation, with many developmental activities in between. The objective is to provide programs and activities that promote the academic and personal success of students that lead to higher retention and graduation rates of AU students.

Freshman Year Experience – This program consists of: Camp War Eagle, Auburn's summer orientation experience for incoming freshmen; the U 100 Auburn Experience academic course for freshmen; and New Student Orientations, held each quarter for all new students enrolling in Auburn University. For assistance, call 844-4501.

Academic Support – The Study Partners Program offers free tutoring services to AU students enrolled in selected undergraduate subjects, and is offered Sunday-Thursday nights in the Haley Center basement lounge. Another program is Supplemental Instruction, a peer-facilitated academic assistance program that targets certain traditionally difficult courses. Regularly scheduled SI sessions are open to all students in the targeted class. Academic resources and individual assistance with study concerns are available. Testing services are also available for students, including such national tests as ACT, SAT, GRE and CLEP. For assistance, call 844-4710.

Student Counseling Services – Counselors and psychologists are available for short-term individual and on-going group counseling to address the emotional/developmental concerns of students. Educational workshops are offered to the campus community. Students needing long-term psychotherapy or 24-hour crisis management are provided an appropriate referral. For assistance, call 844-5123.

Career Development Services offers career counseling and job search assistance to students at various stages of their college experience. Counselors administer and interpret interest and personality inventories, review and edit resumes, conduct mock interviews and provide information/assistance to students through a career resource library, seminars and Internet job linkages. A comprehensive placement office coordinates internship and full-time employment interviews on-campus and through interactive video and maintains a student resume referral database. Career Fairs and Graduate & Professional School Days are hosted annually to offer students the opportunity to explore work and further school options.

Student Life

Student Communications - The following media are subject to supervision by the Board of Student Communications: The Auburn Circle, a general interest magazine; Glomerata, the yearbook issued each spring; The Auburn Plainsman, the weekly student newspaper; Tiger Cub, annual student handbook; WEGL-FM, the student operated campus radio station.

The Foy Union - The focal point for co-curricular student activities and other campus programs. Housed within the confines are The Auburn Plainsman, Glomerata, WEGL-FM, Graduate Student Organization, SGA, Greek Life Office, University Program Council, Panhellenic, Eagle Eye (TV), Black Student Union, International Student Organization, Panhellenic, Tiger Cub, The Auburn Circle, War Eagle Cafeteria, Minority Advancement Office, Tiger Club Accounts, I.D. Center, Computer Connections, a microcomputer lab, recreation room, reading room, woodworking hobby shop, 24-hour computer lab, copy center, Gift Shop, exhibit gallery, lost and found service, automated teller machine, several lounge areas, a large screen TV, and an assortment of meeting and banquet facilities. A University-wide information center, a calendar of events and a Ticket-Link machine are maintained by the Union staff.

Langdon Hall - This auditorium is located next to historic Samford Hall and has a capacity for about 500 people. This is the site of the weekly UPC free movie. It may be reserved for University-related events by contacting the Reservations Coordinator at 844-1303.

James E. Martin Aquatics Center - Provides two swimming pools for use by Health and Human Performance classes, intercollegiate athletics, intramural and club sports, students, faculty, staff and community members. Programs and events are planned and staffed to provide a healthy and safe aquatic environment. For information regarding programs and hours of operation, call 844-4182.

The University Chapel - Located on the corner of South College Street and Thach Avenue, is open on weekdays for students, faculty, and staff. It is used for prayer and meditation. The Chapel may be reserved for weddings, religious and certain other University events by contacting Foy Union at 844-1300.

The University Program Council - Serves as a clearing house for campus programs as well as providing a wide range of programs and entertainment through the following committees: Fine Arts, Major Entertainment, Horizons, Publicity, Special Events, Outdoor Recreation, Indoor Recreation, Films, Religious Affairs, Publications, Production, Volunteerism, Eagle Eye and Public Relations. The experience students acquire in planning and executing these programs offers them the opportunity to enhance their personal growth and development.

Recreational Services - The University offers a well-rounded program of intramural sports and sports clubs and provides a variety of facilities for recreation. Healthful sports, good sportsmanship, and friendly competition are stressed, and all students are urged to participate.

For more information, consult the Recreational Services handbook available in the Recreational Services Office on the second floor of the Student Activities Center.

Music, Theatre and Lectures - Classical concerts, touring play productions, lectures by political figures, news commentators, specialists and prominent scholars, travelling and local shows at the art galleries, opera, ballet and films are among the special events of the year at the University. Many of these activities are free.

The University Concert Choir, the Gospel Choir, Men's Chorus, University Singers, Women's Chorus, the Marching and Concert Bands, the University Symphony Orchestra, the Opera

Workshop and other specialized ensembles offer opportunities for those who want to perform in musical groups.

Eight or nine productions annually are offered by the AU Theatre. Students are welcome to audition for any production, but priority in casting is given to theatre majors and minors.

The Auburn Studio of the Alabama Public Television Network produces programs which are seen throughout the state on the Alabama Educational Television network. WEGL-FM is the campus radio station, operated by students.

Discipline - Auburn University establishes and enforces only those rules and regulations for conduct as are needed to maintain the well-being of the individual student and the University community. The student, by registering at the University, agrees to conform with its regulations. The student is subject to disciplinary action for violating any section of the Code of Student Discipline, which appears in full in the student handbook, the Tiger Cub. Enrollment in no way exempts any student from penalty in case of conviction by public authorities for commission of an illegal act.

Student Government Association

Upon enrollment at Auburn University, each student becomes a member of the Student Government Association, the official organization of the student body. The SGA is the voice of the students, promoting cooperation and communication with the faculty, administration, the Auburn City Council, and the state legislature. The SGA also promotes the social and academic life of Auburn students.

The SGA is organized into three branches. Headed by the SGA President, the executive branch takes on many special projects through the Executive Cabinet. The legislative branch, the SGA Senate, is made up of representatives of each school and college. The judiciary branch makes final judgment on all decisions involving the Code of Laws. The Student Government Constitution and Laws, published in the Tiger Cub, detail the functioning of the student government.

Organizations

The student handbook, Tiger Cub, available in Cater Hall and Foy Union, has a complete listing of the more than 300 chartered and officially recognized organizations on the Auburn campus. Most of these organizations are open to any interested student.

Among the national organizations on campus are honor societies, national recognition societies, social sororities and social fraternities.

Social Fraternities

The National Pan-Hellenic Council coordinates the activities of its member groups:

Alpha Phi Alpha, Kappa Alpha Psi, Omega Psi Phi, and Phi Beta Sigma.

The Interfraternity Council coordinates the relationships among the member fraternities:

Alpha Gamma Rho, Alpha Kappa Lambda, Alpha Phi Alpha, Alpha Psi (professional), Alpha Tau Omega, Beta Theta Pi, Chi Phi, Delta Chi, Delta Sigma Phi, Delta Tau Delta, Delta Upsilon (colony), FarmHouse, Kappa Sigma, Lambda Chi Alpha, Omega Psi Phi, Phi Beta Sigma, Phi Gamma Delta, Phi Sigma Kappa, Phi Kappa Tau, Pi Kappa Alpha, Pi Kappa Phi, Sigma Alpha Epsilon, Sigma Chi, Sigma Nu, Sigma Phi Epsilon, Sigma Pi, Tau Kappa Epsilon, Theta Chi, Theta Xi.

Sororities

The Panhellenic Council coordinates the activities of its member groups:

Alpha Chi Omega, Alpha Delta Pi, Alpha Gamma Delta, Alpha Omicron Pi, Alpha Xi Delta, Chi Omega, Delta Delta Delta, Delta Zeta, Gamma Phi Beta, Kappa Alpha Theta, Kappa Delta, Kappa Kappa Gamma, Phi Mu, Pi Beta Phi, Sigma Kappa, Zeta Phi Beta, Zeta Tau Alpha.

The National Pan-Hellenic Council coordinates the activities of its member groups:

Alpha Kappa Alpha, Delta Sigma Theta, and Zeta Phi Beta.

Special Clinics

The Speech and Hearing Clinic of the Department of Communication Disorders, primarily a teaching facility, provides service for students with speech, hearing or language problems. These services may involve both diagnoses and treatment of problems.

Bookstores

The Auburn University Bookstore, owned and operated by the University, is located in Haley Center and offers a full line of new and used textbooks, course packets, computers, software and other instructional materials. Alpha Phi Omega service fraternity sponsors a nonprofit book exchange in Haley Center where students may purchase and sell textbooks. Commercial book outlets also exist in the city of Auburn.

Parking Permit Registration

It is the responsibility of students and employees of Auburn University operating a vehicle on campus to register for and display a parking permit as prescribed in the Auburn University Parking and Traffic Regulations manual.

Vehicles with Alabama State Government tags must adhere to all University traffic and parking rules and regulations pertaining to motor vehicles. State vehicles may park in designated A, B, C and R zones and in designated Loading Zones for a period not to exceed 15 minutes.

Parking permits are valid for one year beginning September 1 and ending August 31 of the next year. The registration period for employees is between July 31 and August 31. Registration during this period is conducted by mail. Normal registration for students occurs between September 1 and September 30, as well as between quarters and before classes begin.

All permit registration is conducted by the Parking and Traffic Services Office. Employees are mailed preprinted forms, which are to be returned to Parking Services along with the proper registration fee or with approval for payroll deduction. Parking and Traffic Services will return by mail the appropriate hang tag permit. All students must register for a parking permit at the Auburn University Police Department or other designated location. Office hours for permit registration are 7:15 a.m. - 4:15 p.m., Monday through Friday. All fine payments and student permit registration payments are made at the Bursar's Office, Quad Center.

The Institute For Latin American Studies

The Institute for Latin American Studies (ILAS) helps coordinate Auburn University's significant presence in Latin America. ILAS further contributes to Auburn's growing international emphasis by supporting Latin American-related research, instruction and extension across the campus. ILAS is involved in establishing agreements with foreign universities, developing and assisting with study abroad programs, sponsoring faculty travel for research, strengthening the international curriculum, sponsoring special presentations, publishing informational material and soliciting outside funds.

School and College Curricula

This section of the *Bulletin* lists the schools and colleges alphabetically and provides information about curricula within them as well as general descriptions of interdepartmental and interdisciplinary curricula and ROTC programs. Information about most college and school undergraduate admission, retention and graduation standards as well as other information about the college or school is also provided here. Each undergraduate academic program offered by a school or college is presented in a curriculum model with required and elective courses listed in a possible quarter-by-quarter sequence. These models are provided as guides to help students and advisors plan the individual student's course of study. Students should realize, however, that it may not be possible to schedule every course in the year and quarter as presented. Careful planning with the help of an academic advisor is usually necessary if students are to complete their programs in a timely manner and meet all course prerequisites.

All undergraduate curricula can accommodate six hours of basic and six hours of advanced ROTC; military science courses may be taken in place of electives, and in some curricula, with permission, in place of certain required courses.

Interdepartmental and Interdisciplinary Curricula

Agricultural Engineering (AN)

THE CURRICULUM in Agricultural Engineering is coordinated by the College of Agriculture and the College of Engineering. See the College of Agriculture and the Department of Agricultural Engineering in the College of Engineering for further information.

Environmental Science (ENS)

THE CURRICULUM in Environmental Science is an interdepartmental program based on the strengths of Auburn University in the engineering, biological and physical sciences. See the Department of Civil Engineering in the College of Engineering for further information.

Forest Engineering (FYE)

THE CURRICULUM in Forest Engineering is coordinated by the School of Forestry and the College of Engineering. See the Department of Agricultural Engineering in the College of Engineering for further information.

Geological Engineering (GE)

THE CURRICULUM in Geological Engineering is an interdisciplinary curriculum conducted cooperatively by the departments of Civil Engineering and Geology. See the Department of Civil Engineering in the College of Engineering for further information.

Materials Engineering (MTL)

THE CURRICULUM in Materials Engineering is an interdisciplinary curriculum conducted cooperatively by departments in the College of Engineering and the College of Sciences and Mathematics. See the Department of Mechanical Engineering in the College of Engineering for further information.

College of Agriculture

JAMES E. MARION, *Dean*
R. L. GUTHRIE, *Associate Dean*
RONALD L. SHUMACK, *Associate Dean*
R. A. VOITLE, *Associate Dean*
W. J. ALVERSON JR., *Assistant Dean*

THE COLLEGE OF AGRICULTURE prepares students for careers in agriculture and related professions. Courses provide a broad foundation in the basic sciences, a general knowledge of the applied sciences, and a reasonable number of cultural subjects. Most of the basic science courses are given in the freshman and sophomore years and serve as a basis for a better understanding of the applied subjects, usually taken in the junior and senior years.

A curriculum is offered in Agricultural Business and Economics, Agricultural Journalism, Agricultural Science, Agronomy and Soils, Animal and Dairy Sciences, Fisheries Management, Horticulture, Entomology-Integrated Pest Management, Poultry Science and Rural Sociology. Students who wish to major in other agricultural fields should consult with the Dean.

The College of Agriculture also furnishes the subject matter training in Agriculture for the curricula of Agricultural Engineering and Agribusiness Education.

Transfer credit will not normally be allowed for any course passed with a grade lower than C at any other college or university.

Transfer credit for agricultural subjects not considered equivalent to those required in the chosen curriculum may be substituted for elective credit; however, duplication of credit will not be allowed. Equivalency of agricultural subjects will be determined by the Dean's Office; however, students may also obtain transfer credit on the basis of validating examinations. Arrangements for validating examinations must be made with the Dean of Agriculture in the first quarter of enrollment in the College of Agriculture at Auburn and the examinations must be completed before the middle of the second quarter. Transfer credit for courses which are upper-division courses at AU will not be accepted from two-year colleges.

Pre-Veterinary Medicine

It is possible to gain admission to the College of Veterinary Medicine upon completion of the minimum requirements listed below. Students may declare an option upon admission to the College of Agriculture and must declare an option by the end of their freshman year. If students are admitted to the College of Veterinary Medicine after the completion of all the requirements in the first three years of the option, they may obtain a Bachelor of Science degree in the option after completion of the freshman year in the College of Veterinary Medicine.

The minimum requirements for admission to the College of Veterinary Medicine, Auburn University (111 quarter hours), are incorporated in the first three years of the options listed under the following curricula: Animal and Dairy Sciences, Fisheries and Allied Aquacultures, and Poultry Science.

English Composition (p. 16)	10	Mathematics (p. 16)	5	CH 207, 208	10
Core History (p. 16)	9	Philosophy (p. 16)	5	PS 205, 206, 207	14
Literature (p. 16)	10	Social Studies (p. 16)	9	BI 101, 103	10
CH 103, 104, 105	15	Fine Arts (p. 16)	3	ADS 321	5
Scientific Electives	8				

See also the curriculum in Pre-Veterinary Medicine (PV), College of Sciences and Mathematics.

Dual Degree Program With Engineering

This program gives students the opportunity to receive two baccalaureate degrees - one in agriculture and one in engineering. Although the program was developed primarily for students desiring a combination of a biological sciences program with an engineering program, it does not preclude the consideration of other Agriculture-Engineering combinations.

In general, students will be enrolled in the College of Agriculture for approximately three years and in the College of Engineering for approximately two years. During the first three years, the students should take those mathematics, physics and chemistry courses necessary to allow them to transfer to the College of Engineering. Additionally, before transferring to the College of Engineering, they should have completed approximately three-fourths of the total hours required by the College of Agriculture for the awarding of the degree.

To become dual-degree candidates under this program, students must have GPAs which indicate the likelihood of satisfactory completion of College of Engineering degree requirements and a recommendation from the Dean of the College of Agriculture. The recommendation should be sought one quarter before the expected transfer to the College of Engineering.

It is also possible for qualified students to transfer to the College of Engineering following the junior year with the intent of seeking a master's degree rather than a bachelor's degree in one of the engineering disciplines. Consult the Engineering Dean's Office concerning this option.

Minors

Agricultural Business and Economics — minors in Agribusiness and Natural Resources Economics and Environmental Policy are offered for non-AEC majors. Program requirements for each area include completion of a minimum of 25 hours from the following lists with a minimum of 15 hours of 300-level courses or higher. **Agribusiness** - AC 215, AEC 202, 203, 301, 303, 304, 307, 500 or 501 or 510, 503, 505 and 530. **Natural Resources** - AEC 202, 203, 305, 307, 503, 505, 509, 512 and RSY 565. Required courses are underlined.

Agronomy and Soils — An Agronomy and Soils minor has been established in the department for non-majors and will consist of 25 quarter hours. Course requirements are: AY 304 (305 or 307 may be substituted), 200; five hours from AY 502, 508 and 515; five hours from AY 400, 401, 315, 312 and 510; and an additional five hours from any of these. Any that are required for the student's major cannot be counted toward the 25 hours needed for the minor. A student is responsible for having the necessary prerequisites these courses require.

Animal and Dairy Sciences — A minor in Animal and Dairy Sciences is available to non-ADS majors, and requires completion of 25 hours from the following list with a minimum of 15 hours of 300-level courses or higher: ADS 200, 271, 321, 322, 330 or 333, 350, 360, 361, 370 or 270, 401, 403, 405, 407, 409, 470 and 520. Required course is underlined.

Poultry Science — A minor in Poultry Science is available to non-PH and PHPV majors. The program requires completion of a minimum of 25 hours which will include PH 201 and PH 503 and at least 16 hours from the following: PH 401, 402, 407, 505, 506, 508, 511, 515 and 516.

Rural Sociology — A minor in Rural Sociology for non-RSY majors requires at least 25 credit hours of courses chosen from among: RSY 261, 362, 561, 370 or 371, 498, 561, 564 and 565. Required courses are underlined.

Agricultural Business and Economics

The Agricultural Business and Economics curriculum provides broad technical training and a strong liberal arts background to prepare students for careers in agribusiness, the largest industry in the U.S.

While the AEC student may choose a general program of study, selection of one of three career tracks can provide more directed specialized training in Agribusiness Management and Marketing, Farm Management or Natural Resources Management. The Agribusiness track emphasizes training in management, marketing/sales and finance. Employment opportunities may involve such areas as management, sales, finance, government, public relations or personnel. The Farm Management track provides training in management and decision-making at the farm level along with the technical aspects of production agriculture. Graduates can pursue careers in the farm sector as owner-operators or managers. Employment opportunities for graduates of the Natural Resources Management track will increase over time as resource scarcity, environmental and rural development issues become more critical. Public institutions which are entrusted with managing and safeguarding our natural resource endowment are primary employers of graduates in this area. Students who forego the career tracks and opt for a general program of study can design it to help them reach their goals and help ensure a rewarding career. Beyond the identified career areas, graduates of the program complete advanced degrees in the discipline and in business and law schools.

Curriculum in Agricultural Business and Economics (AEC)

FRESHMAN YEAR

First Quarter			Second Quarter			Third Quarter		
MH 161 An. Geom. & Cal. *	5		MH 169 or 162	5		AEC 202 Ag. Econ.	5	
EH 110 Eng. Comp.	5		BI 101 Prin. Biol.	5		U 103 Individual & Society	3	
Core History (p. 16)	3		U 102 Political Economy	3		Core History (p. 16)	3	
U 101 Soc., Cult. & Environ.	3		Core History (p. 16)	3		BI 102 or 103 (p. 16)	5	

College of Agriculture

SOPHOMORE YEAR

AEC 210 Mic. Comp. App. Ag. 3	AEC 203 Ag Econ. II 5	Ag. Elect. III ** 5
COM 100 Prof. Comm. 3	AC 212 Accounting II 4	RSY 261 Rural Soc. 3
Ag. Elective I ** 5	Ag. Elective II ** 4	Core Fine Arts (p. 16) 3
AC 211 Accounting I 4	EH 220 Great Books I 5	EH 221 Great Books II 5

JUNIOR YEAR

AEC 307 Ag. Law 4	AEC 301 Agr. Marketing 4	AEC 530 Ag. Trade 4
MN 301 or DMS 215 or RSY 220 5	PA 102 or 219 Ethics 5	EH 408 B&P Writ. 5
EC 302 Inter. Microecon. 5	AEC 304 Ag. Finance 4	Career Path Elect. (see advisor) 7
Career Elect. or ROTC 2	AEC 490 Undergrad. Seminar 1	
	Career Elect. or ROTC 2	

SENIOR YEAR

AEC 501 Farm Mgt. 5	AEC 503 Ag. Prices 4	AEC 505 Ag. Policy 3
AEC 509 Resource Econ. 4	Career Elect. (see advisor) 7	AEC 510 Ag. Bus. Mgt. 5
Career Elect. (see advisor) 3	Gen. Elect. or ROTC 5	Career Elect. (see advisor) 11
Gen. Elect. or ROTC 3		

TOTAL — 192 QUARTER HOURS

* MH 160 may be taken as a general elective.

** One agricultural elective must be selected from each of the following three groupings: (I.) ADS 200 or PH 201; (II.) AN 350-354; and (III.) AY 200, HF 201 or HF 202.

Career Tracks. Undergraduate AEC majors may select one of three career tracks. (I. Agribusiness Management and Marketing, II. Farm Management, or III. Natural Resources Economics) or they may opt for a more general degree program by taking courses from all career track listings. Required courses within each career track are selected in consultation with advisors. A list of career track courses and recommended electives is available from the department head or dean.

AEC 399, Agricultural Business and Economics Internship. Up to eight hours' credit is available subject to arrangements with approved firms, businesses or agencies.

Agricultural Engineering

Agricultural Engineering students receive academic training that addresses the engineering of biosystems and natural resource systems. The goal of the program is to educate engineers grounded in both basic engineering principles and the principles and processes involved in biosystems, natural resources and related industries. The degree program is designed to teach students to solve engineering problems by investigating key aspects of a system. They learn to identify and understand the interrelation of separate components. The program contains a strong foundation of engineering courses common to all engineering students, including courses in mathematics, physics, computer applications and the engineering sciences. Building on these fundamentals, a broad spectrum of additional topics in required courses in engineering, plant and animal sciences, biological sciences and natural resources addresses engineering problems found in biosystems. The student is introduced to the process of engineering design early in required AE courses. Each AE course incorporates design fundamentals specific to the problems being taught. This broad educational experience is focused on a real-world engineering problem in a two-quarter senior design experience. The student is part of a design team that develops a solution to a problem presented by a cooperating industrial partner. Through this capstone design experience, the student is able to bring together many aspects of their engineering education in solving a problem. The agricultural engineering graduate is well equipped to solve engineering problems in the interface between the physical and biological world.

Careers for graduates include design, development, consulting, management, sales, testing, construction, research and other functions that engineers fulfill. They find positions in environmental management and protection, machine development, irrigation and water management, natural resource conservation, process engineering, structural design and computer and automatic control system applications. They work in their own firms or for manufacturers, consultants, governmental agencies, processors, etc. Graduates can pursue advanced degrees in engineering, business, science, law and other fields.

The curriculum is coordinated by the colleges of Engineering and Agriculture. Students register in Engineering and are assigned an academic advisor in AE. Beginning students should apply for admission to the College of Engineering and complete the Pre-Agricultural Engineering program. For qualified agricultural students who develop an interest in AE during their freshman year, an alternate course sequence for completion of the Pre-Agricultural Engineering program under the guidance of an AE advisor is available in the College of Agriculture. See the College of Engineering section for program objectives, career opportunities, admission, degree requirements and curriculum model.

Agricultural Journalism

The Agricultural Journalism major provides graduates with training in a wide range of agricultural courses and a strong background in journalism.

College of Agriculture

Most large agricultural firms, plus many magazine companies, publish agricultural material regularly for the general public and members of their organizations. Editors and writers of such publications need a knowledge of agricultural subject matter and terminology, as well as skill in writing. Likewise, Cooperative Extension Services and Agricultural Research Information Departments hire a wide variety of agricultural journalism graduates.

Curriculum in Agricultural Journalism (AJ)

FRESHMAN YEAR			Second Quarter			Third Quarter			
First Quarter									
U	101 Soc., Cult. & Environ.	3	U	102 Political Economy	3	ADS	200 Int. A & D Sci.	5	
BI	101 Prin. of Biol.	5	BI	107 Env. of Biol.	5	MH	160 Pre-Cal w/Trig.	5	
EH	110 Eng. Comp.	5	Core Philosophy (p. 16)			JM	101 Newspaper Style	3	
Core History (p. 16)			3	Core History (p. 16)			3	Core History (p. 16)	3
SOPHOMORE YEAR									
CH	103 Fund. Chem.	4	EH	220 Great Books I	5	EH	221 Great Books II	5	
CH	103L Gen. Chem. Lab	1	CH	104 Fund. Chem.	4	U	103 Individual & Society	3	
AY	200 Crop Prod.	5	CH	104L Gen. Chem. Lab	1	PH	201 Poultry Sci.	4	
JM	221 Beg. Newswrit.	5	JM	313 Reporting	5	ENT	204 Insects	3	
Elective or ROTC			1				JM	111 Newspaper Lab	1
JUNIOR YEAR									
AEC	202 Ag. Econ. I	5	ADS	322 Feeds & Feeding	4	JM	322 Feature Writ.	5	
HF	202 Fru. & Veg. Prod.	5	EH	400 Adv. Comp.	5	RTF	338 Broad. News Writ.	5	
JM	321 Newsw. Des.	5	Elective			8	JM	314 Editing	3
COM	100 Prof. Comm.	3				Core Fine Arts (p. 16)			3
SENIOR YEAR									
AEC	301 Ag. Mkt.	4	JM	421 Photo Journ. I	5	AEC	505 Ag. Policy	3	
JM	422 or 425	1-4	JM	423 Journalism Wkshp.	1	JM	304 or PR 304	5	
AY	307 Gen. Soils	5	Ag. Electives **			8	RTF	3XX Prod. Req. *	5
JM	485 or 470	3	AEC	210 Mic. App. Ag.	or	Electives			3
			CSE	100 Intro. to PC	3				
TOTAL — 192 QUARTER HOURS									
* One of the following must be taken: RTF 334, 335, 336 or 337.									
** See menu in the dean's office.									

* One of the following must be taken: RTF 334, 335, 336 or 337.

** See menu in the dean's office.

Agricultural Science (AG)

FRESHMAN YEAR			
First Quarter		Second Quarter	
U 101 Soc., Cult. & Environ.	3	Core History (p. 16)	3
MH 160 Pre-Cal. w/Trig.	5	CH 103 Fund. Chem.	4
EH 110 Eng. Comp.	5	CH 103 Chem. Lab	1
Core History (p. 16)	3	BI 101 Prin. Biol.	5
Elective or ROTC	1	Elective or ROTC	1
SOPHOMORE YEAR			
EH 220 Great Books I	5	AEC 202 Ag. Econ. I	5
BI 102 Plant Biol.	5	CH 207 or 203	5
PS 200 Fund. Physics	5	BI 103 An. Biol.	5
Elective or ROTC	1	U 103 Individual & Society	3
		Elective or ROTC	1
JUNIOR YEAR			
PH 201 Poultry Sci.	4	BY 306 Fund. Plant Phys.	5
COM 100 Prof. Com.	3	PLP 309 Gen. Plant Path.	5
AEC 210 Mic. Comp. Ag.	3	EH 404 Tech. Writing	5
ADS 321 An. Bioch. & Nutr.	5		
SENIOR YEAR			
AY 400 or 401	5	AEC 301 Ag. Mkt.	4
FY 350 For. Wld. Owners	5	AY 502 Soil Fertil.	5
Ag. Engr. Elec. **	4	Elective	5
Elective	3	Seminar ***	1
TOTAL — 192 QUARTER HOURS			

* To be selected from ADS 401, 403, 405, 407, 409 or PH 503.

** To be selected from AN 350, 351, 352, 353 and 356.

*** To be selected from ADS 380, AEC 490, AY 490, HF 490, PH 401 or RSY 490.

Agronomy and Soils (AY)

Courses prepare Agronomy graduates for: (1) the chemical industry, producers of fertilizers, herbicides and other agricultural chemicals; (2) farm-advisory agencies such as soil testing laboratories and other private consultants; (3) public farm-advisory agencies such as the

Agricultural Extension Service or the Natural Resources Conservation Service; (4) Research agencies of corporations, U.S. Department of Agriculture, colleges and universities and State Agricultural Experiment Stations; (5) turfgrass industry; (6) farming.

FRESHMAN YEAR		
First Quarter	Second Quarter	Third Quarter
BI 101 Prin. of Biol. 5	BI 102 Plant Biol. 5	CH 104 Gen. Chem. 4
MH 160 Pre-Cal. w/Trig. 5	CH 103 Gen. Chem. 4	CH 104L Gen. Chem. Lab. 1
AY 200 Basic Crop Science 5	CH 103L Gen. Chem. Lab. 1	MH 161 An. Geom. & Cal. 5
Elective or ROTC 1	EH 110 Eng. Comp. 5	ADS 200 Intr. ADS * 5
	Elective or ROTC 1	Elective or ROTC 1

SOPHOMORE YEAR		
CH 207 Org. Chem. 4	AEC 202 Ag. Econ. I 5	BY 306 Fund. Pitt. Phys. 5
CH 207L Org. Chem. Lab. 1or	U 101 Soc., Cult. & Environ. 3	PS 205 Intro. Physics 4
CH 203 Org. Chem. 5	Core History (p. 16) 3	PS 205L Physics Lab. 1or
AY 312 Prin. Weed Sci. 5	AY 304 Gen. Soils 5	PS 200 Fund. Physics 5
EH 220 Great Books I 5	Elective or ROTC 1	EH 221 Great Books II 5
Elective or ROTC 1		Elective or ROTC 1

JUNIOR YEAR		
EH 406 or 404 Writing 5	ZY 300 Genetics 5	PLP 309 Plant Path. 5
Electives 5	Electives 5	AY 401 Prin. For. Crops 5
Core History (p. 16) 3	Core History (p. 16) 3	PA 101 or 102 or 219 5
U 102 Political Economy 3	U 103 Individual & Society 3	

SENIOR YEAR		
ENT 502 Econ. Entol. 5	AEC 210 or DMS 216 3	AY 500 Soils & Env. Quality 4
Core Fine Arts (p. 16) 3	AY 400 Adv. Cp. Prd. ** 5	AY 515 Soil Morph. 5
Electives 9	AY 502 Soil Fert. 1	Electives 5
	AY 490 Sr. Seminar 1	
	Elective 2	

TOTAL — 192 QUARTER HOURS

* Students in Turf will take AY 315.

** Not required in Turf track.

TRACKS IN AGRONOMY AND SOILS

PRODUCTION TRACK: Required: AN 350, AY 500, 508, 510, AEC 501, plus 14 hours of electives.

TURF MANAGEMENT TRACK: Required: AN 350, 356, HF 221, 521, AY 500, 516, AC 215, MN 310, plus five hours electives. Seven hours of advanced ROTC can be substituted for required courses.

BUSINESS TRACK: Required: AY 500, 508, AEC 501, 503, AC 215, MN 310, MT 241 or AEC 307, plus five hours of electives. Seven hours of advanced ROTC can be substituted for required courses.

SCIENCE TRACK: Required: AN 350, AY 500, CH 207 (instead of CH 203), PS 205 (instead of PS 200), CH 105, 305, plus 23 hours of electives, which must include an additional 10 hours of AY courses.

Animal and Dairy Sciences (ADS)

Two curriculum options are available within the ADS Department to accommodate students with varied career goals and prepare them for leadership careers in livestock and related industries. The Agribusiness/Muscle Foods/Production option offers students flexibility in designing a program by selection of professional electives. Upon completion of this option, graduates should be qualified for career opportunities in livestock production, journalism, extension, livestock feed/nutrition, pharmaceutical industry, sales and merchandising, agricultural finance, governmental and private agencies and industries related to the processing of meat products.

Contemporary animal agriculture is expanding into a "high tech" era which needs graduates with basic science backgrounds to aid in discovery and development of new concepts for animal production. The Pre-Veterinary/Basic-Science (ADPV) option provides students with a foundation in biological and physical science necessary for entry into graduate programs in biotechnology and related disciplines while satisfying prerequisites for veterinary school. Postgraduate studies are necessary for most positions in teaching, extension and research at universities and allied animal industries, as well as areas of biotechnology.

Agribusiness/Muscle Foods/Production Options (ADS)

FRESHMAN YEAR		
First Quarter	Second Quarter	Third Quarter
ADS 110 Orient. An. Dai. Sc. 1	BI 101 Gen. Biol. 5	AEC 202 Ag. Econ. I 5
ADS 200 Intr. An. Dai. Sc. 5	COM 100 Prof. Comm. 3	BI 103 An. Biol. 5
EH 110 Eng. Comp. 5	PA 102 Intr. Ethics 5	PS 200 Gen. Physics 5
MH 160 Pre-Cal w/Trig. 5	U 101 Soc., Cult. & Environ. 3	ROTC or Elect. 1
ROTC or Elect. 1	ROTC or Elect. 1	

College of Agriculture

SOPHOMORE YEAR

CH 103 Fund. Chem. I	4	ADS 271 Value Based Analysis	4	AEC 210 Microcomputers	3
CH 103L Gen. Chem. Lab	1	CH 104 Fund. Chem. II	4	CH 203 Org. Chem.	5
ZY 251	5	CH 104L Gen. Chem. Lab	1	Core History (p. 16)	3
Core History (p. 16)	3	Core History (p. 16)	3	ZY 300 Genetics	5
U 102 Political Economy	3	U 103 Individual & Society	3	ROTC or Elect.	1
ROTC or Elect.	1	ROTC or Elect.	1		

JUNIOR YEAR

ADS 321 An. Bioch. Nutr.	5	ADS 370 Meat Sci.	4	ADS 322 Feeds & Feeding	4
ADS 361 Repro. Phys.	5	ADS 350 An. Breeding	4	MB 300 Gen. Microbiol.	5
EH 221 Great Books I	5	EH 221 Great Books II	5	EH 404 Tech. Writing	5
Elective	1	MU 373 Music Appreciation	3		
		ADS 380 Under. Sem.	1		

SENIOR YEAR

ADS 4XX Prod. Requirement *	4	AEC 500 Prin. Agribus. Mgt.	5	Electives	15
Electives	11	Electives	10		

TOTAL — 192 QUARTER HOURS

* One of the following courses must be taken: ADS 401, 403, 405, 407, 409, 470.

Pre-Veterinary Medicine/Basic Science Option (ADPV)

The curriculum listed in the first nine quarters (141 quarter hours) will satisfy the requirements for admission to the College of Veterinary Medicine. Satisfactory completion of the remaining requirements of the ACPV curriculum or completion of one year in the Veterinary Medicine curriculum entitles the student to the B.S. degree in Animal and Dairy Sciences. The following model is one of several combinations of classes qualifying for the B.S. degree*.

FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
ADS 110 Or. An. & Dairy Sci.	1	BI 101 Gen. Biol.	5	ADS 200 Intr. An. Dairy Sci.	5
CH 103 Fund. Chem. I	4	CH 104 Fund. Chem. II	4	BI 103 An. Biol.	5
CH 103L Gen. Chem. Lab	1	CH 104L Gen. Chem. Lab	1	CH 105 Fund. Chem. III	4
EH 110 Eng. Comp.	5	PA 102 Intr. Ethics	5	CH 105L Gen. Chem. Lab	1
MH 160 Pre-Cal w/Trig.	5	ROTC or Elect.	1	ROTC or Elect.	1
ROTC or Elect.	1				

SOPHOMORE YEAR

CH 207 Org. Chem.	4	CH 208 Org. Chem.	3	EH 221 Great Books II	5
CH 207L Org. Chem. Lab	1	CH 208L Org. Chem. Lab	2	PS 207 Intr. Physics III	3
Core History (p. 16)	3	EH 220 Great Books I	5	PS 207L Physics Lab	1
MU 373 Music Appr.	3	PS 206 Intr. Physics II	4	ZY 300 Genetics	5
PS 205 Intr. Physics I	4	PS 206L Physics Lab	1	ROTC or Elect.	1
PS 205L Physics Lab	1	ROTC or Elect.	1		
ROTC or Elect.	1				

JUNIOR YEAR

ADS Major Elective *	4	ADS Major Elective *	4	ADS Major Elective *	4
ADS 321 An. Bio. Nutr.	5	ADS 322 Feeds & Feeding	4	U 103 Individual & Society	3
EH 404 Tech. Writing	5	Core History (p. 16)	3	ZY 251 or 316	5
U 101 Soc., Cult. & Environ.	3	U 102 Political Economy	3	Core History (p. 16)	3
		Elective	1		
		ADS 380 Under. Sem.	1		

SENIOR YEAR

ADS Major Elective *	5	COM 100 Prof. Comm.	3	AEC 210 Microcomp.	3
Electives	7	Electives	11	MB 300 Gen. Microbiol.	5
AEC 202 Ag. Econ. I	5			Electives	8

TOTAL — 192 QUARTER HOURS

* Must complete four of the following seven courses: ADS 322, 350, 360, 361, 370, 520 and ADS 4XX (where ADS 4XX is one of the following production courses: ADS 401, 403, 405, 407, 409, 470).

Entomology - Integrated Pest Management (ENTI)

The Entomology - Integrated Pest Management curriculum in the Department of Entomology provides students with a broad base of training in the pest sciences. This option prepares students for employment in many areas of animal and plant agriculture, and can be used as the basis for advanced study in entomology, plant pathology, nematology and weed science.

FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
U 101 Soc., Cult. & Environ.	3	U 102 Political Economy	3	U 103 Individual & Society	3
BI 101 Gen. Biol.	5	BI 102 Plant Biol.	5	BI 103 An. Biol.	5
CH 103 Fund. Chem. I	4	CH 104 Fund. Chem. II	4	EH 110 Eng. Comp.	5
CH 103L Gen. Chem. Lab	1	CH 104L Gen. Chem. Lab	1	Core History (p. 16)	3
Core Fine Art (p. 16)	3	MH 161 An. Geom. & Cal. *	5	Elective or ROTC	1
Elective or ROTC	1	Elective or ROTC	1		

College of Agriculture

SOPHOMORE YEAR

EH 220 Great Books I	5	EH 221 Great Books II	5	ENT 304 Gen. Entomology	5
Core History (p. 16)	3	CH 207 Org. Chem.	4	CH 208 Org. Chem.	3
PS 200 Found. Physics	5	CH 207L Org. Chem. Lab	1	CH 208L Org. Chem. Lab	2
Elective or ROTC	1	Core History (p. 16)	3	AY 304 Gen. Soils	5
		Elective or ROTC	1	Elective or ROTC	1

JUNIOR YEAR

Core Philosophy (p. 16)	5	ZY 300 Genetics	5	MB 300 Microbiol.	5
AY 312 Prin. Weed Sci.	5	ZY 303 Prin. Evol. & Syst.	5	ENT 510 Insect Ident.	5
ZY 306 Prin. Ecol.	5	ZY 251 Physiology	5	EH 404 Tech. Writing (p. 16)	5
				COM 100 Prof. Comm.	3

SENIOR YEAR

AEC 210 Micro. in Ag.	3	AY 200 Crop Prod.	5	PLP 309 Gen. Plant Path.	5
ENT 406 Mthds. Ins. Pest Mgt.	5	ENT 503 Toxicology	5	ENT 405 App. Entomol.	5
DMS 215 Intr. Biol. Stat.	5	ENT 404 Ins. Alf. Humans	5	AEC 202 Ag. Econ. I	5
Elective	2			Elective	2

TOTAL — 192 QUARTER HOURS

* If the student is not prepared for MH 161, MH 160 may be taken for elective credit.

Fisheries and Allied Aquacultures

Curricula in Fisheries and Allied Aquacultures have options in Science and Production to that prepare students for careers in sport fish management, aquatic ecology and aquaculture. The Pre-Vet Option meets the admission requirements for the AU College of Veterinary Medicine.

Curriculum in Fisheries Management (FAA)

SCIENCE OPTION

FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
BI 101 Prin. Biol.	5	BI 102 Plant Biol.	5	BI 103 An. Biol.	5
CH 103 Fund. Chem. I	4	MH 161 An. Geom. & Cal.	5	PS 205 Intr. Phys./Lab/R	5
CH 103L Gen. Chem. Lab	1	CH 104 Fund. Chem. II	4	EH 110 Eng. Comp.	5
Elective or ROTC	5	CH 104L Gen. Chem. Lab	1	Elective or ROTC	1
		Elective or ROTC	1		

SOPHOMORE YEAR

Core History (p. 16)	3	Core History (p. 16)	3	Core History (p. 16)	3
EH 220 Great Books I	5	EH 221 Great Books II	5	COM 100 Prof. Comm.	3
PS 206 Intr. Phys./Lab/R	5	CH 207 Org. Chem/Lab	5	CH 208 Org. Chem. Lab	5
Elective or ROTC	3	Elective or ROTC	3	Core Fine Arts (p. 16)	3
				Elective or ROTC	2

JUNIOR YEAR

FAA 537 Fish Biol.	4 or	FAA 538 Gen. Ichthy.	5	FAA 502 Limnology	5
FAA 511 Prin. Aquacult.	5	ZY 306 Prin. Ecology	5	ENT 304 Gen. Entomol.	5
AEC 202 Ag. Econ. I	5	AEC 210 Microcomp. App.	3	U 103 Individual & Society	3
U 101 Soc., Cult. & Environ.	3	U 102 Political Economy	3	PE Swimming	2
ZY 251 Physiology	5				

SENIOR YEAR

FAA 393 Seminar	1	FAA 454 Hatch Man. I	5	DMS 501 Biostat.	5
FAA 580 Water Science	5	MB 300 Gen. Micro.	5	FAA 455 Hatch Man. II	5
ZY 300 Genetics	5	ZY 401 Invert. Zool.	5	Core Philosophy (p. 16)	5
EH 404 Tech. Writ.	5	Elective	1	Elective	1

TOTAL — 192 QUARTER HOURS

PRODUCTION OPTION

FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
BI 101 Prin. Biol.	5	BI 102 Plant Biol.	5	BI 103 An. Biol.	5
CH 103 Fund Chem I	4	EH 110 Eng. Comp.	5	CH 203 Org. Chem.	5
CH 103L Gen. Chem. Lab	1	CH 104 Fund. Chem. II	4	MH 160 Pre-Cal. w/Trig.	5
Elective or ROTC	6	CH 104L Gen. Chem. Lab	1	Elective or ROTC	1
		Elective or ROTC	1		

SOPHOMORE YEAR

Core History (p. 16)	3	Core History (p. 16)	3	Core History (p. 16)	3
EH 220 Great Books I	5	EH 221 Great Books II	5	COM 100 Prof. Com.	3
MB 300 Gen. Microbiol.	5	AY 304 Gen. Soils	5	PS 200 Fund. Physics	5
Elective or ROTC	3	Elective or ROTC	3	Core Fine Arts (p. 16)	3
				Elective or ROTC	2

JUNIOR YEAR

FAA 537 Fish Biol. Lab	4 or	FAA 538 Gen. Ichthy.	5	FAA 502 Limnology	5
FAA 511 Prin. Aquacult.	5	U 102 Political Economy	3	EH 404 Tech. Writ.	5
AEC 202 Ag. Econ. I	5	ZY 306 Prin. Ecol.	5	U 103 Individual & Society	3
U 101 Soc., Cult. & Environ.	3	AEC 210 Microcomp. App.	3	PE Swimming	2
ADS 321 An. Biochem.	5				

College of Agriculture

SENIOR YEAR

FAA 393 Seminar	1	FAA 454 Hatch Man. I	5	FAA 402 Fish Hith. Man.	5
FAA 580 Water Science	5	AN 352 Tract. Engr. Tech.	4	FAA 455 Hatch Man. II	5
AEC 500 Agribusiness Man.	5	DMS 215 Intro. Biostat.	5	Core Philosophy (p. 16)	5
Elective	5	Electives	2		

TOTAL — 192 QUARTER HOURS

FISHERIES MANAGEMENT (FPV) — PRE-VET OPTION

FRESHMAN YEAR

First Quarter

BI 101 Prin. Biol.	5
CH 103 Fund. Chem. I	4
CH 103L Gen. Chem. Lab	1
Elective or ROTC	6

Second Quarter

BI 102 Plant Biol.	5
MH 161 An. Geom. & Cal.	5
CH 104 Fund. Chem. II	4
CH 104L Gen. Chem. Lab	1
Elective or ROTC	1

Third Quarter

BI 103 An. Biol.	5
PS 205 Intr. Phys./Lab/R	5
EH 110 Eng. Comp.	5
Elective or ROTC	1

SOPHOMORE YEAR

Core History (p. 16)	3
EH 220 Great Books I	5
PS 206 Intr. Phys./Lab/R	5
Elective or ROTC	2

Core History (p. 16)	3
EH 221 Great Books II	5
CH 207 Org. Chem/Lab	5
PS 207 Intr. Physics/Lab	4

Core History (p. 16)	3
COM 100 Prof. Comm.	3
CH 208 Org. Chem. Lab	5
Core Fine Arts (p. 16)	3
Elective or ROTC	1

JUNIOR YEAR

FAA 537 Fish Biol. Lab	4 or
FAA 511 Prin. Aquacult.	5
FAA 580 Water Science	5
U 101 Soc., Cult. & Environ.	3

FAA 538 Gen. Ichthy.	5
ADS 321 An. Biochem.	5
EH 404 Tech. Writ.	5
AEC 210 Microcomp. App.	3
U 102 Political Economy	3

FAA 502 Limnology	5
Core Philosophy (p. 16)	5
U 103 Individual & Society	3
PE Swimming	2

SENIOR YEAR

FAA 393 Seminar	1
AEC 202 Ag. Econ. I	5
ZY 300 Genetics	5
MB 300 Gen. Micro.	5

FAA 454 Hatch Man. I	5
ZY 306 Prin. Ecology	5
ZY 401 Invert. Zool.	5
Elective	1

DMS 501 Biostat.	5
FAA 455 Hatch Man. II	5
ENT 304 Gen. Entomol.	5

TOTAL — 192 QUARTER HOURS

Horticulture (HF)

Courses prepare Horticulture graduates for the following careers: nursery manager, landscape designer, landscape installer, landscape maintenance, interior landscaping, plant propagator, city or state horticulturist, extension horticulturist, horticulture writer, horticulture teacher, florist shop manager, greenhouse manager, vegetable producer, orchard manager, chemical company representative, seed company representative or retail garden center manager.

Three undergraduate options are available to students in Horticulture: Landscape Horticulture, Ornamental Production and Fruit and Vegetable Crop Production. Horticulture offers masters and doctoral degrees which leads to professional positions in teaching, research and extension.

Ornamental Production Option

FRESHMAN YEAR

First Quarter

BI 101 Prin. Biol.	5
MH 160 Pre-Cal. w/Tng.	5
HF 101 Intr. Hort.	3
U 101 Soc., Cult. & Environ.	3
Elective or ROTC	1

Second Quarter

BI 102 Plant Biol.	5
CH 103 Fund. Chem. I	4
CH 103L Gen. Chem. Lab	1
Core History (p. 16)	3
U 102 Political Economy	3
Elective or ROTC	1

Third Quarter

EH 110 Eng. Comp.	5
CH 104 Fund. Chem. II	4
CH 104L Gen. Chem. Lab	1
Core History (p. 16)	3
U 103 Individual & Society	3
Elective or ROTC	1

SOPHOMORE YEAR

Core History (p. 16)	3
AEC 210 Micro. App. in Ag.	3
AC 215 Fund. G&C Acct.	5
HF 222 Arboriculture	5
Elective or ROTC	1

Core Philosophy (p. 16)	5
EH 220 Great Books I	5
COM 100 Prof. Comm.	3
Core Fine Arts (p. 16)	3
Elective or ROTC	1

HF 224 Plant Prop.	5
EH 221 Great Books II	5
AEC 202 Ag. Econ. I	5
Elective or ROTC	1

JUNIOR YEAR

Prof. Elect. (two from HF 201, 501 415 or ZY 300)	10
HF 222 Arboriculture	5

EH 408 B&P Writ.	5
BY 306 Plant Physiol.	5
Electives	5

AY 307 Gen. Soils	5
PLP 309 Plant Pathol.	5
HF 321 Small T, S & V	5

SENIOR YEAR

ENT 502 Econ. Entomol.	5
AY 315 Turf Mgt.	5
HF 390 Seminar	1
Electives	5

HF 523 Nurs. Mgt.	5
Electives	10

HF 522 Flor. Crop Prod.	5
HF 410 Herb. Plants	5
Electives	5

TOTAL — 192 QUARTER HOURS

Fruit and Vegetable Option

FRESHMAN YEAR

First Quarter	
BI 101 Prin. Biol.	5
MH 160 Pre-Cal. w/Trig.	5
HF 101 Intr. Hort.	3
U 101 Soc., Cult. & Environ.	3
Elective or ROTC	1

Second Quarter	
BI 102 Plant Biol.	5
CH 103 Fund. Chem. I	4
CH 103L Gen. Chem. Lab	1
Core History (p. 16)	3
U 102 Political Economy	3
Elective or ROTC	1

Third Quarter	
EH 110 Eng. Comp.	5
CH 104 Fund. Chem. II	4
CH 104L Gen. Chem. Lab	1
Core History (p. 16)	3
U 103 Individual & Society	3
Elective or ROTC	1

SOPHOMORE YEAR

Core History (p. 16)	3
CH 207 Org. Chem.	4
CH 207L Org. Chem. Lab	1 or
CH 203 Org. Chem.	5
AEC 210 Micro. App. in Ag.	3
HF 201 Orch. Mgt.	5
Elective or ROTC	1

Core Philosophy (p. 16)	5
EH 220 Great Books I	5
JM 315 Basic Journ.	3
Core Fine Arts (p. 16)	3
Elective or ROTC	1

HF 221 Lndsc. Garden.	or
HF 224 Plant Prop.	5
EH 221 Great Books II	5
AEC 202 Ag. Econ. I	5
Elective or ROTC	1

JUNIOR YEAR

HF 501 Comm. Veg. Crops	5
COM 100 Prof. Comm.	3
EH 408 B&P Writ.	5
Electives	3

AY 304 Gen. Soils	5
BY 306 Fund. Plant. Phys.	5
AEC 301 Ag. Mktg.	4

PLP 309 Plant Path.	5
ZY 300 Genetics	5
HF 504 or 505 or 506	5

SENIOR YEAR

HF 390 Seminar	1
AEC 500 Prin. of Agribus. Mgt.	5
AY 312 Weed Sci.	5
Electives	4

HF 504 or 505 or 506	5
Electives	6
AN 350 Soil & Water Tech.	4

HF 504 or 505 or 506	5
Electives	6
ENT 502 Econ. Entomol.	5

TOTAL — 192 QUARTER HOURS

Landscape Horticulture Option

FRESHMAN YEAR

First Quarter	
BI 101 Prin. Biol.	5
MH 160 Pre-Cal. w/Trig.	5
HF 101 Intr. Hort.	3
U 101 Soc., Cult. & Environ.	3
Elective or ROTC	1

Second Quarter	
BI 102 Plant Biol.	5
CH 103 Fund. Chem. I	4
CH 103L Gen. Chem. Lab	1
Core History (p. 16)	3
U 102 Political Economy	3
Elective or ROTC	1

Third Quarter	
EH 110 Eng. Comp.	5
CH 104 Fund. Chem. II	4
CH 104L Gen. Chem. Lab	1
Core History (p. 16)	3
U 103 Individual & Society	3
Elective or ROTC	1

SOPHOMORE YEAR

Core History (p. 16)	3
BY 306 Plant Phys.	5
AEC 210 Micro. App. in Ag.	3
AEC 202 Ag. Econ. I	5
Elective or ROTC	1

COM 100 Prof. Comm.	3
Core Philosophy (p. 16)	5
EH 220 Great Books I	5
Elective or ROTC	1
Core Fine Arts (p. 16)	3

HF 224 Plant Prop.	5
AC 215 Fund. G&C Acct.	5
EH 221 Great Books II	5
Elective or ROTC	1

JUNIOR YEAR

HF 222 Arboriculture	5
HF 412 Int. Plntscaping	3
EH 408 Business Writing	5
Electives	2

PLP 309 Plant Path.	5
Electives	10

AY 307 Gen. Soils	5
HF 321 Small T, S & V	5
Electives	5

SENIOR YEAR

ENT 502 Econ. Entomol.	5
AY 315 Turfgrass Mgt.	5
HF 427 Intermed. Des.	5
HF 390 Seminar	1

HF 521 Lndscp. B, E & M	5
Prof. Electives (two from AN 356, LA 342, HF 415, 428, 523)	10

HF 410 Herb. Plants	5
Electives	10

TOTAL — 192 QUARTER HOURS

Poultry Science (PH)

Rapid growth of the poultry industry in Alabama and the U.S. has resulted in a demand for poultry science graduates that exceeds the current supply. These graduates must be qualified to fill positions within all segments of the poultry industry including live production, processing, quality control, product development, technical service, marketing and sales. Excellent opportunities exist for graduates qualified to fill technical positions in the poultry related sciences such as physiology, nutrition, microbiology, pathology and food science. An active internship program and numerous scholarships awarded by the department and the Alabama Poultry and Egg Association assist Poultry Science majors in progressing towards their career objectives.

Two Poultry Science options are available: The general option offers flexibility in designing a curriculum to prepare students for careers in the poultry industry. The pre-veterinary medicine option meets the admission requirements for the AU College of Veterinary Medicine.

General Poultry Science Option

FRESHMAN YEAR

First Quarter

MH 160 Pre-Cal w/Trig.	5
BI 101 Gen. Biol.	5
PH 201 Poultry Sci.	4
Gen. Elective	2

Second Quarter

BI 103 An. Biol.	5
EH 110 Eng. Comp.	5
CH 103 Fund. Chem. I	4
CH 103L Chem. Lab	1
Gen. Elective	1

Third Quarter

Core History (p. 16)	3
COM 100 Prof. Comm. *	3
CH 104 Fund. Chem. II	4
CH 104L Chem. Lab	1
Gen. Elective	4

SOPHOMORE YEAR

CH 203 Org. Chem.	5
AEC 210 Microcomp. in Ag.	3
Core Philosophy (p. 16)	5
U 101 Soc., Cult. & Environ.	3

Core History (p. 16)	3
PS 200 Found. Physics	5
EH 220 Great Books I	5
U 102 Political Economy	3

Core History (p. 16)	3
AEC 202 Ag. Econ. I	5
EH 221 Great Books II	5
U 103 Individual & Society	3
Gen. Elective	1

JUNIOR YEAR

ADS 321 An. Bioch. & Nutr.	5
ZY 251 Com. Poultry Prod. *	5
ZY 251 Physiology	5
Prof. Elective (see advisor)	1

ZY 300 Genetics	5
PH 515 Avian Repro. Phy. *	4
Core Fine Arts (p. 16)	3
Prof. Elective (see advisor)	4

MB 300 Gen. Microbiology *	5
PH 506 Poul. Breed. Fert. *	5
Prof. Electives (see advisor)	6

SENIOR YEAR

AEC 500 Ag. Bus. Mgt.	5
PH 505 Poul. Feed. *	5
PH 401 Jr.-Sr. Seminar *	1
Prof. Elective (see advisor)	5

PH 511 Proc. & Marketing *	4
EH 404 or 408	5
Prof. Electives (see advisor)	7

PH 508 Poul. Dis. Par. *	4
PH 516 Poul. & Meat Safety	4
Prof. Electives (see advisor)	3
COM 141 Group Prob. Solv. *	5

TOTAL — 192 QUARTER HOURS

* Indicates courses in the major. To graduate, students must earn a 2.0 GPA in this group, as well as in all courses attempted.

Poultry Science Pre-Veterinary Medicine Option (PH-PV)

The curriculum listed for the first nine quarters (144 quarter hours) satisfies minimum requirements for admission to the College of Veterinary Medicine. Completion of the remaining requirements of the Poultry Science curriculum or completion of one year in the Veterinary Medicine curriculum entitles the student to the B.S. degree in Poultry Science. Seventeen hours of general electives will be selected in consultation with the student's advisor. To meet the requirements for the B.S. degree in Poultry Science in four years, at least 13 hours of PH electives must be completed by the end of the junior year.

FRESHMAN YEAR

First Quarter

Core History (p. 16)	3
CH 103 Fund. Chem. I	4
CH 103L Chem. Lab	1
PH 201 Poul. Sci. *	4
U 101 Soc., Cult. & Environ.	3
ROTC or Gen. Elec.	1

Second Quarter

Core History (p. 16)	3
MH 160 Pre-Cal. w/Trig.	5
CH 104 Fund. Chem. II	4
CH 104L Chem. Lab	1
U 102 Polit Econ.	3

Third Quarter

Core History (p. 16)	3
CH 105 Fund. Chem. III	4
CH 105L Chem. Lab	1
EH 110 Eng. Comp.	5
U 103 Individual & Society	3
ROTC or Gen. Elective	1

SOPHOMORE YEAR

EH 220 Great Books I	5
CH 207 Org. Chem.	4
CH 207L Org. Chem. Lab	1
PS 205 Intr. Phys. I	4
PS 205L Physics Lab	1
ROTC or Gen. Elective	1

BI 101 Gen. Biol.	5
CH 208 Org. Chem.	4
CH 208L Org. Chem. Lab	1
PS 206 Intr. Phys. II	4
PS 206L Physics Lab	1
ROTC or Gen. Elective	1

BI 103 An. Biol.	5
EH 221 Great Books II	5
PS 207 Intr. Phys. III	3
PS 207L Intr. Phys. Lab	1
ROTC or Gen. Elective	1

JUNIOR YEAR

ADS 321 An. Bioch. Nutr.	5
PH 503 Com. Poultry Prod. *	5
ZY 316 Phys. Dom. An.	5

ZY 300 Genetics	5
PH 515 Avian Repro. Phy. *	4
Core Philosophy (p. 16)	5
Core Fine Arts (p. 16)	3

MB 300 Microbiology *	5
PH 506 Poul. Breed. Fert. *	5
EH 404 or 408	5
ROTC or Gen. Elective	1

SENIOR YEAR

PH 505 Poultry Feed *	5
PH 401 Jr.-Sr. Seminar *	1
AEC 210 Micro. in Ag.	3
AEC 202 Ag. Econ. I	5
ROTC or Gen. Elective	2

PH 511 Proc. & Mkt. *	4
AEC 500 Prin. Ag. Bus. Mgt.	5
COM 141 Group Prob. Solv. *	5
ROTC or Gen. Elective	1

PH 508 Poul. Dis. Par. *	4
PH 516 Poul. & Meat Safe. *	4
COM 100 Prof. Com. *	3
ADS 322 Fds. & Feeding	4
ROTC or Gen. Elective	1

TOTAL — 192 QUARTER HOURS

* Indicates courses in the major. To graduate, students must earn a 2.0 GPA in this group, as well as in all courses attempted.

Rural Sociology

The Rural Sociology curriculum emphasizes the application of scientific knowledge to human problems. Courses provide fundamental preparation in the humanities, mathematics and the sciences, as well as in the basics of production agriculture. The curriculum is comprised of a major in rural sociology with exposure to agricultural business and production in rural areas.

Human services occupations represent an area of expanding employment opportunity. Graduates are qualified for work involving administration of state and federal programs designed to serve the elderly, disabled, poor, youth, unemployed and others. Employment opportunities exist in regional and urban planning units, agricultural agencies, agribusiness firms and other organizations desiring employees with human relations as well as agricultural and economic skills.

See lists of suggested general and agricultural elective courses. ROTC courses may be substituted for general electives up to a total of 12 credit hours. Students wishing to enroll in Agriculture courses requiring the prerequisite CH 104 or ADS 320 should take CH 103 and 104 as general electives.

Curriculum in Rural Sociology (RSY)

FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
EH	110 Eng. Comp. 5	Core Philosophy (p. 16) 5	ADS	200 Intr. An. & D. Sc. 5	
BI	101 or SM 101 5	BI	102 or 103 or 107 5	MH	161 An. Geom. & Cal. * 5
U	101 Soc., Cult. & Environ. 3	U	102 Political Economy 3	U	103 Individual & Society 3
Core History (p. 16) 3		Core History (p. 16) 3		Core History (p. 16) 3	

SOPHOMORE YEAR

EH	220 Great Books I 5	EH	221 Great Books II 5	Core	Fine Arts (p. 16) 3
AEC	202 Ag. Econ. I 5	AEC	203 Ag. Econ. II 5	AY	200 Crop Prod. 5
RSY	261 Intr. Rur. Soc. 3	RSY	362 Comm. Org. 4	RSY	220 Statistics or
AEC	210 Microcomp. in Ag. 3	COM	100 Prof. Comm. 3	DMS	215 Intr. Bio. Stat. 5
				Gen. Elective 3	

JUNIOR YEAR

SOC	204 Soc. Behav. 5	AEC	301 Ag. Mkt. 4	AEC	304 Ag. Finance 4
RSY	370 Mthds. Soc. Res. 5	EH	408 B&P Writ. 5	RSY	498 Dir.Fld. Exp. 5
EC	302 Inter. Micro. Econ. 5	Gen. Elective 4	Gen. Elective 4	Gen. Elective 4	
		Ag. Elective 4	Ag. Elective 4	Ag. Elective 3	

SENIOR YEAR

RSY	564 Soc. Com. Dev. 5	RSY	561 Rural Soc. 5	RSY	565 Soc. Nat. R&E 5
SOC	502 Soc. Theory 5	AEC	500 Prin. Ag. Bus. Mgt. 5	Gen. Elective 5	
Gen. Elective 6		Ag. Elective 3	Ag. Elective 3	Ag. Elective 5	
		Gen. Elective 3	Gen. Elective 3		

TOTAL — 192 QUARTER HOURS

* Students not qualifying for MH 161 will take MH 160 for elective credit.

College of Architecture, Design and Construction

J. THOMAS REGAN, *Dean*
BETTY J. FENDLEY, *Associate Dean*

THE COLLEGE OF ARCHITECTURE, DESIGN AND CONSTRUCTION offers undergraduate programs in the academic areas of Architecture, Building Science, Industrial Design, Interior Design and Landscape Architecture. Graduate programs are offered in Building Science, Community Planning and Industrial Design.

Any student in the College, during the third year of study, may apply to be a degree candidate for the Bachelor of Science in Environmental Design. This four-year, non-accredited degree is available at the recommendation of the head of the student's academic unit, and with the approval of the dean. Each student will follow an approved plan of specialized study during the fourth year. If a Bachelor of Science in Environmental Design degree is received, a graduate must apply for re-admission to be a candidate for any other degree offered by the College. Some candidates for Master's programs may complete the requirements for the Bachelor of Science in Environmental Design, as a second baccalaureate degree, at the completion of undergraduate studies as qualification requirements for entry to graduate studies.

The College of Architecture, Design and Construction maintains the right to limit enrollment in all programs and may retain student work for exhibition or for records and accreditation purposes.

School of Architecture

Entering Freshmen – Eligibility for acceptance to Architecture, Interior Design and Landscape Architecture is based on performance in courses in the first year of the model curriculum and the cumulative GPA on these courses which must be a minimum of 2.5.

Transfer Students from non-architectural programs are required to begin the design sequence with first year. Transfer students from accredited schools of Architecture will be required to present a portfolio of their work to the Design Review Committee for evaluation. Assuming acceptance, the Committee will determine the level of placement in the design sequence.

Summer Design Program – Summer Option, which consists of all first-year design courses, is offered for Auburn University students or transfer students who have completed one year of university work. All students must meet School entrance criteria and be within the enrollment limitations of the School.

Foreign Study Program – A one-quarter foreign study opportunity is offered to qualified students in all programs in the third- and fourth-year levels. Students follow an organized itinerary of travel and study during the Spring Quarter.

Rural Studies Program – The School maintains a remote rural studio. This program focuses on the issues and dilemmas in the rural South and offers qualified students the opportunity to work hands-on in helping communities and individuals meet their most immediate needs for shelter and an improved quality of life.

Urban Studies Program – The School maintains an urban studies center in downtown Birmingham. This location offers students in all programs a unique opportunity for the study of urban design issues in context with a vital regional center. Students live in Birmingham for the quarter and work closely with specialized faculty, professional practitioners, as well as community residents and leaders. All students in the architecture program are expected to spend one quarter in Birmingham during their fourth year.

Professional Experience Practicum – Professional experience in architecture, interior design, landscape architecture, engineering, construction or related fields is recommended prior to entry into the fifth year of the architecture or landscape architecture curriculum, or the fourth year of the interior design curriculum. For students in five-year programs the equivalent of two summers is recommended. Participation in the Rural Studies Program satisfies one summer of this recommended experience.

Academic Standards and Policies – All design studio courses must be taken in sequence and in observance of the prerequisite courses as stated. Any student receiving a grade below

C in AR 101, 102, 103 or AR 201, 202, 203, will be reviewed by the Design Review Committee at the end of the year for approval to continue in the design sequence. Similarly, a student with a majority of grades at the **C** level may be reviewed by the Committee. All students completing the second year design sequence will be reviewed for continuance into the third year design sequence.

In the event two grades of **D** are received in any of the upper level design sequences or in the event a grade of **F** is assigned (300-400- or 500-level design courses), a review is required for continuance in the program including the option of being required to repeat the entire design sequence for that year, or to withdraw from the program.

To proceed to the beginning sequence of a design studio at third-, fourth- or fifth-year levels, the student must have completed all required courses prior to that level or have the approval of the Design Review Committee. Enrollment in 300- and 400-level BSC courses will be limited to those with an overall GPA of 2.3 or above and third-year standing in design. Each student will be assigned a faculty advisor who will assist in the coordination of course requirements and registration.

Department of Building Science

Entering Freshmen who meet the general admission requirements of Auburn University will be admitted to the Pre-Building Science program.

Transfer Students must have a minimum GPA of 2.8 and will be accepted on a space available basis as determined by the department head.

Academic Standards and Policies — To be classified as 03 BSC, the student must have completed all course work shown in the first two years of the model curriculum, have a 2.5 cumulative GPA on all courses attempted at Auburn University, and have a minimum of 96 quarter hours. Students in the College of Architecture, Design and Construction will be admitted in 300- and 400-level BSC courses upon completion of second-year design. Students will be admitted on a space available basis.

Department of Industrial Design

Entering Freshmen who meet the general admission requirements of Auburn University will be admitted to the Pre-Industrial Design Program.

Transfer Students from other institutions must meet the university admission requirements. Students transferring from other design disciplines will be required to present examples of their work to determine studio placement. Internal transfer students should contact the department head to determine eligibility.

Summer Design Program — Transfer students who have completed courses in the model curriculum for the freshman year may qualify for the Summer Design Program. This program allows students to complete the first year Industrial Design Studio requirements. After completion, students may enter the sophomore design studio sequence in the fall quarter. Contact the department head for more information.

Academic Standards and Policies — Design courses must be taken in sequence and may not be taken simultaneously with prerequisites. All courses in the freshman year must be completed before entering the sophomore year of study. A grade of **C** or higher must be made in studio courses. Grades below **C** in studio courses 110 through 412 must be repeated. Any student with two grades at the **C** level or below in DSN 110, 111, 112 or 210, 211, 212 may be reviewed by the Design Review Committee for approval to continue in the design sequence. Admission to the Industrial Design curriculum in the second and third years requires a 2.5 cumulative GPA. The department maintains the right to select the most highly qualified students for admission to and continuation in the program and to retain original work accomplished as part of course instruction. A portfolio and presentation are required for graduation.

Architecture

The Bachelor of Architecture degree is awarded upon the completion of the five year curriculum. Qualified students may elect to pursue a concurrent Master of Community Planning degree, Bachelor of Interior Design or a Bachelor of Science in Building Construction degree under a special dual degree program. The Cooperative Education program is available to students after the second year of studio. Active participation in the Intern Development Pro-

gram (IDP) is encouraged after completion of the third year in the curriculum. IDP is a prerequisite to licensing in the State of Alabama.

Most states require that an individual intending to become an architect hold an accredited degree. Two types of degrees are accredited by the National Architectural Accrediting Board: (1) The Bachelor of Architecture, which requires a minimum of five years of study, and (2) The Master of Architecture, which requires a minimum of three years of study following an unrelated bachelor's degree or two years following a related preprofessional bachelor's degree. These professional degrees are structured to educate those who aspire to registration/licensure as architects.

The four-year, preprofessional degree, where offered, is not accredited by NAAB. The preprofessional degree is useful for those wishing a foundation in the field of architecture, as preparation for either continued education in a professional degree program or for employment options in related areas.

The five-year Bachelor of Architecture degree is accredited by the National Architectural Accrediting Board. The four-year preprofessional Bachelor of Science in Environmental Design is not an accredited degree.

Auburn is a member of the Association of Collegiate Schools of Architecture.

Students are encouraged to work at an architect's office, a construction site or other approved professional endeavor prior to their fourth year.

Curriculum in Architecture (AR)

First Quarter			FIRST YEAR			Third Quarter		
			Second Quarter					
AR	101 Basic Design	5	AR	102 Basic Design	5	AR	103 Basic Design	5
AR	105 Freehand Drawing	1	AR	106 Proj. Geo. & Orth.	1	AR	107 Axo./Obl.Proj.	1
MH	161 An. Geom. & Cal.	5	EH	110 Eng. Comp.	5	HY	103 World History	3
HY	101 World History	3	HY	102 World History	3	U	103 Indiv. & Soc.	3
U	101 Soc., Cult. & Environ.	3	U	102 Political Economy	3	PS	205 Physics	4
						PS	205L Physics Lab	1
			SECOND YEAR					
AR	201 Arch. Des.	5	AR	202 Arch. Des.	5	AR	203 Arch. Des.	5
AR	205 Perspective	1	AR	206 Color Media & Theory ...	1	AR	207 Analytique	1
PS	206 Physics	4	PA	101 Philosophy	5	AR	230 Mtl. & Mth. of Cons.	3
PS	206L Physics Lab	1	EH	221 Great Books II	5	AR	270 Hist. & Theory Arch.	5
EH	220 Great Books I	5					Core Fine Arts (p. 16)	3
			THIRD YEAR					
AR	301 Arch. Des.	6	AR	302 Arch. Des.	6	AR	303 Arch. Des.	6
AR	371 Hist. & Theory Arch.	3	AR	372 Hist. & Theory Arch.	5	BSC	314 Reinf. Concrete	5
AR	231 Syst. & Const. Tech.	3	BSC	311 Str. of Mtl.	5	BSC	330 Env. Control I	3
BSC	211 Mech. of Struct.	5				CP	576 His. & Theo. Urb. Form ..	3
			FOURTH YEAR					
AR	401 Arch. Design	6	AR	402 Arch. Design	6	AR	403 Arch. Design	6
BSC	331 Env. Control II	5	EH	400 Adv. Comp.	5	AR	571 Prof. Pract. **	3
BSC	315 Appl. Struct.	5	AR	WR Seminar	3	CP	575 Urb. Pln. & Design	3
				Elective	3	AR	Seminar	3
			FIFTH YEAR					
AR	501 Arch. Design	6	AR	502 Arch. Design	6	AR	503 Arch. Design	8
AR	597 WR Intro. Research	3	AR	598 Thes. Res.	2	AR	599 Thesis Res.	1
AR	Seminar	3	AR	Seminar	3	AR	Seminar	3
Prof. Grp. Elect. *	3		Prof. Grp. Elect. *	3		Elective	3	
AR	430 Fid. Proj. Elec.	3	AR	435 Dessain	3	Elective	3	
SUMMER DESIGN PROGRAM*			BIRMINGHAM PROGRAM			EUROPEAN STUDIES PROGRAM		
						RURAL STUDIO		
AR	101-102-103 Basic Des.	5-5-5	AR	400 Arch. Des.	6	LA/ID/AR	Arch. Des.	6
AR	105 Freehand Drawing	1	CP	575 UD Mth. & Prc.	3	LA/ID/AR	Dessain	3
AR	106 Proj. Geo. & Orth.	1	AR	571 Prof. Pract.	3	LA/ID/AR	Seminar	3
AR	107 Axo./Obl.Proj.	1	AR	Seminar	3	LA/ID/AR	Elective	3

BACHELOR OF ARCHITECTURE

TOTAL — 251 QUARTER HOURS

* Professional Group Elective, such as Bus. Law, CAD, Programming, Lighting, Management, Estimating, Economics, Community Planning, etc.

** To be taken in Birmingham.

Electives can be used for ROTC or combined into one 3-hour seminar and one 3-hour elective.

One seminar will be chosen from four of the following: AR 551, 552, 553, 556, 557 and 558.

Interior Design

Curriculum in Interior Design/Architecture
Dual Degree — Summer Option (ID/AR)

First Quarter			FIRST YEAR			Third Quarter		
			Second Quarter					
MH	161 An. Geom. & Cal.	5	AR	100 Car. in Des. & Const.	3	AR	105/106/107 Drawing	3
HY	101 World History	3	EH	110 Eng. Comp.	5	HY	103 World History	3
U	101 Soc., Cult. & Environ.	3	HY	102 World History	3	U	103 Indiv. & Soc.	3
Core Fine Arts (p. 16)		3	U	102 Political Economy	3	PS	205 Physics	4
						PS	205L Physics Lab	1
			SECOND YEAR					
AR	201 Arch. Des.	5	AR	202 Arch. Des.	5	AR	203 Arch. Des.	5
PS	206 Physics	4	PA	101 Philosophy	5	AR	230 Mtl. & Mth. of Cons.	3
PS	206L Physics Lab	1	EH	221 Great Books II	6	AR	270 Hist. & Theory Arch.	5
EH	220 Great Books I	5						
			THIRD YEAR					
AR	301 Arch. Des.	6	AR	300 Arch/ID Des.	6	AR	303 Arch. Des.	6
AR	371 Hist. & Theory Arch.	3	AR	372 Hist. & Theory Arch.	5	BSC	314 Reinf. Concrete	5
AR	231 Syst. & Const. Tech.	5	BSC	311 Str. of Mtl.	5	BSC	330 Env. Control I	3
BSC	211 Mech. of Struct.	5				CP	576 His. & Th. Urb. Form	3
			FOURTH YEAR					
AR	401 Arch. Design	6	AR	400 Arch/ID Des.	6	AR	403 Arch. Design	6
BSC	331 Env. Control II	5	EH	400 Adv. Comp.	5	AR	571 Prof. Practice	3
BSC	315 Appl. Struct.	6	AR	WR Seminar	3	CP	575 Urb. Pln. & Design	3
ID	215 Elements of ID	3	ID	216 Elements of ID	3	ID	217 Elements of ID	3
			FIFTH YEAR					
AR	501 Arch. Design	6	AR	502 Arch. Design	6	AR	503 Arch. Design	8
AR	597 WR Intro. Research	3	AR	598 Thes. Res.	2	AR	599 Thesis Res.	1
AR	Seminar	3	AR	Seminar	3	AR	Seminar	3
Prof. Grp. Elect. *		3	AR	435 Dessein	3	Prof. Grp. Elect. *		3
AR	430 Fid. Proj. Elec. **	3						
SPRING/SUMMER OPTION			BIRMINGHAM PROGRAM			EUROPEAN STUDIES PROGRAM		
first year design			required during fourth year			RURAL STUDIO curriculum opportunities		
AR	101 Basic Design	5	AR	Arch. Des.	6	LA/ID/AR	Arch. Des.	6
AR	102 Basic Design	5	CP	575 UD Mth. & Prc.	3	LA/ID/AR	Dessein	3
AR	103 Basic Design	5	AR	571 Prof. Pract.	3	LA/ID/AR	Seminar	3
			AR	Seminar	3	LA/ID/AR	Elective	3
			ADDITIONAL QUARTER *DUAL DEGREE					
			executed prior to fifth year AR 502/503					
			ID	403 Interior Design Thesis	7			
			ID	408 WR Int. Des. Res.	2			
			ID	368 Hist. & Theory of ID	5			
			ID	445 Prof. Practice ID	5			

BACHELOR OF INTERIOR DESIGN/ARCHITECTURE
TOTAL — 270 QUARTER HOURS

* Professional Group Elective, such as Bus. Law, CAD, Programming, Lighting, Management, Estimating, Economics, Community Planning, etc.

** Students are encouraged to work in an architecture or interior design office in a professional endeavor prior to fourth year.

Landscape Architecture

The course of study in landscape architecture acknowledges the regional culture of its locale and student body while seeking to present an attitude toward design which is informed and world-based. The primary mission of the program is: to build upon the cultural value base of the region; expand the student's scope of perception, experience and technique; and develop an intellectual attitude of inquiry, tolerance and professionalism. Students are encouraged to develop the capability to bring order and balance to the environment in a way that reflects the highest values and aspirations of the human condition, unrestrained by popular convention.

The Landscape Architecture Program is accredited by the Landscape Architecture Accrediting Board, and the Bachelor of Landscape Architecture degree is awarded upon the successful completion of the five year curriculum. Qualified students may also elect to pursue concurrently the Master of Community Planning degree under a special dual degree program. The total curriculum prepares the student for professional practice.

Curriculum in Landscape Architecture (LA)

FIRST YEAR

First Quarter

AR	101 Basic Design	5
AR	105 Freehand Drawing	1
EH	110 Eng. Comp.	5
MH	160 Pre Cal. w/Trig.	5

Second Quarter

AR	102 Basic Design	5
AR	106 Proj. Geo. & Orth.	1
BI	105 Pers. in Biology	5
U	101 Soc., Cult. & Environ.	3
	Core Fine Arts (p. 16)	3

Third Quarter

AR	103 Basic Design	5
AR	107 Axi./Obli.Proj.	1
BI	107 Env. Biology	5
PA	102 Ethics	5

SECOND YEAR

AR	201 Arch. Design	5
AR	205 Perspective	1
U	102 Political Economy **	3
EH	220 Great Books I	5
HY	101 World History	3

AR	202 Arch. Design	5
AR	206 Color Media & Theory	1
U	103 Individual & Society	3
EH	221 Great Books II	5
HY	102 World History	3

LA	203 LA Design	5
AR	207 Analytique	1
AR	270 Hist. & Theory of AR	5
AR	230 Matl. & Meth.	3
HY	103 World History	3

THIRD YEAR

LA	301 Basic L.A. Design	6
LA	322 Euro. LA History	3
LA	341 LA Const. I	3
HF	222 Arboriculture	5

LA	302 Basic L.A. Design	6
LA	323 Amer. LA History	3
LA	342 LA Construction	3
GL	110 Physical Geology	5

LA	303 Basic L.A. Design	6
LA	363 Comp. in LA	3
CP	576 Urban Design	3
HF	321 Decid. Sh. & Vines	5

FOURTH YEAR

LA	401 Natural Sci. Studio	6
LA	435 Desseln	3
Coor.	Nat. Sci. Elective **	3
ZY	306 Ecology	5

LA	402 Int. LA Design	6
LA	343 LA Construction	3
LA	455 Seminar	3
EH	400 Adv. Composition	5

LA	403 Urban Studio	6
AR	Seminar	3
LA	571 Pro. Pract.	3
CP	575 Urb. Design	5

FIFTH YEAR

LA	501 Adv. LA Des.	6
LA	597 WR Intro. to Res.	3
LA	553 Seminar	3
Coor.	Elec. ***	3
BSC	324 Surveying	3

LA	502 Thesis/Term. Proj.	6
LA	598 Thesis Res.	2
	Elective *	3
	Coor. Elective **	5

LA	503 Thesis/Term. Proj.	6
LA	599 Thesis Res.	1
	Elective	3
	Elective *	3

SUMMER DESIGN PROGRAM *

AR	101-102-103 Basic Des.	5-5-5
AR	105 Freehand Drawing	1
AR	106 Proj. Geo. & Orth.	1
AR	107 Axi./Obli.Proj.	1

EUROPEAN STUDIES PROGRAM

RURAL STUDIO

LA	LA Design	6
AR	Desseln	3
LA	Seminar	3
	Elective	3

BACHELOR OF LANDSCAPE ARCHITECTURE

TOTAL — 251 QUARTER HOURS

Pr. AR 100 For Summer Design Program.

* Electives can be used for ROTC or combined into one 3-hour seminar and one 3-hour elective.

** Coordinated Natural Science Electives include, but are not limited to: AY 310, CP 524, GY 315, GL 105, ZY 205, 527.

*** Selection of 6 credit hours of coordinated electives will be developed with the Program Chair upon admission into the Landscape Architecture Program in the third year.

Building Science

Students in the Building Science program learn the basic principles of science, architecture, engineering, business and construction. The four-year curriculum leads to the degree of Bachelor of Science in Building Construction, accredited by the American Council for Construction Education. Graduates qualify for positions in all areas of the construction industry.

The Cooperative Education Program is offered after completion of two quarters of study at Auburn.

Non-majors will be accepted in BSC classes on a space-available basis.

Curriculum in Building Science (BSC)

FIRST YEAR

First Quarter

MH	161 An. Geom. & Cal.	5
EH	110 Eng. Comp.	5
U	101 Soc., Cult. & Environ.	3
HY	121 or 101	3
	Elective	1

Second Quarter

MH	162 An. Geom. & Cal. *	5
BSC	160 Hist. of Bldg.	3
U	102 Political Economy	3
HY	122 or 102	3
	Elective	1

Third Quarter

PS	205 Physics	4
PS	205L Physics Lab	1
PA	101 Intro. to Logic	5
U	103 Indiv. & Soc.	3
HY	123 or 103	3
	Elective	1

SECOND YEAR

BSC	202 Matls. of Constr.	5
EH	220 Great Books I	5
PS	206 Physics	4
PS	206L Physics Lab	1
BSC	200 Draw. & Proj.	3

BSC	203 Wkg. Drwg. & Spec.	4
AC	211 Intr. Acct. I	4
EH	221 Great Books II	5
PS	207 Physics	3
PS	207L Physics Lab	1

BSC	211 Mech. of Struct.	5
AC	212 Intr. Acct. II	4
BSC	204 Const. Sys.	3
COM	100 (or Adv. ROTC)	3
	Core Fine Arts (p. 16)	3

College of Architecture, Design and Construction

THIRD YEAR

BSC 311 Str. of Mtls. 5	BSC 314 Reinf. Concrete 5	BSC 315 App. Struct. 5
EC 301 or 200 5	MN 310 or 443 5	EH 408 Bus. & Prof. Writ. 5
BSC 324 Constr. Surveying 3	BSC 352 HVAC Syst. 3	BSC 354 Plbg. & Elec. Syst. 3
BSC 371 Computers-Lab/Lec. 5	BSC 381 Estimating I 5	BSC 382 Estimating II 5

FOURTH YEAR

BSC 534 Constr. Scheduling 5	BSC 404 Contracting Business 5	BSC 490 Thesis 8
BSC 423 Soils & Found. 3	BSC 581 Project Management 4	MN Elective 5
BSC 440 Construction Safety 3	BSC 425 Temporary Structures 3	
BSC 580 Construction Law 4	MH/Science Elective 5	
Elective 4		

BACHELOR OF SCIENCE IN BUILDING CONSTRUCTION

TOTAL — 205 QUARTER HOURS

* Five hours chemistry or MH 169 may be substituted for MH 162.

Six hours of BSC 399 may be used as free electives for co-op students; three hours for all others.

To be classified as 03 BSC and be able to take 300, 400 and 500 BSC courses, the student must have completed all course work shown in the first two years of the model curriculum, have a 2.5 GPA on all courses attempted at Auburn University, and have completed a minimum of 96 quarter hours.

Industrial Design

Students of Industrial Design learn the basic principles of design, engineering, human factors, marketing and sociology. They acquire such technical skills as computer-aided design and drafting, prototype fabrication, photography, sketching and graphics techniques. Students are introduced to design methods, color theory, product planning, visual statistics, materials, manufacturing methods, consumer psychology and environmental studies.

The four-year curriculum, which is accredited by the National Association of Schools of Art and Design, leads to the professional degree of Bachelor of Industrial Design. Graduates will qualify for positions in industrial design consultant offices and in various industries. Motivated students will be considered for admission to the Graduate Program in Industrial Design. The Cooperative Education Program is offered at the completion of the second year of studio. Transfer students may qualify for Summer Design Program after completing DSN 111 and 112.

Curriculum in Industrial Design (DSN)

FIRST YEAR

First Quarter

DSN 110 Drw. Syst. 5
MH 161 An. Geom. & Cal. 5
HY 121 Tech. & Civil. 3
U 101 Soc., Cult. & Environ. 3
Elective or ROTC 1

Second Quarter

DSN 111 Persp. Drw. 5
EH 110 Eng. Comp. 5
HY 122 Tech. & Civil. 3
U 102 Political Economy 3
Elective or ROTC 1

Third Quarter

DSN 112 Drw. Des. Prod. 5
SM 101 Con. of Sci. 5
HY 123 Tech. & Civil. 3
DSN 200 Res. Prototfab. 1
U 103 Individual & Society 3
Elective or ROTC 1

SECOND YEAR

DSN 210 Prin. DSN I 5
PA 102 Ethics 5
CSE 100 Intro. to PC 3
Elective or ROTC 3

DSN 211 Prin. DSN II 5
DSN 221 Mtls. & Tech. 5
EH 220 Great Books I 5

DSN 212 Prin. DSN III 5
DSN 222 Ind. Des. Mths. 5
EH 221 Great Books II 5

THIRD YEAR

DSN 310 DSN/Con. Dev. 6
DSN 307 Anthropometry 5
PS 200 Fnd. Physics 5

DSN 311 DSN/Pack. 6
DSN 308 Design Wkshop. 5
EH 404 Tech. Writ. 5

DSN 312 DSN/Prod. Des. 6
DSN 385 Sem. in DSN 5
Core Fine Arts (p. 16) 3
COM 100 Prof. Comm. 3

FOURTH YEAR

DSN 410 DSN/Systems 6
DSN 415 Hist. of DSN 5
EC 202 Economics 5

DSN 411 DSN/Adv. Prod. 6
DSN 420 WR Pro. Prac. 5
DSN 485 Sem. in DSN 5

DSN 412 DSN/Thesis 6
MT 331 Prin. of Mkt. 5
PG 300- or 400-level course 5

SUMMER DESIGN PROGRAM *

DSN 110 Drw. Syst. 5
DSN 111 Persp. Drw. 5
DSN 112 Drw., Des. Prod. 5

BACHELOR OF INDUSTRIAL DESIGN

TOTAL — 195 QUARTER HOURS

College of Business

C. WAYNE ALDERMAN, *Dean*
AMITAVA MITRA, *Associate Dean*

THE COLLEGE OF BUSINESS prepares students to become effective and socially responsible managers of business and industrial organizations and government agencies and responsible citizens and leaders of society.

To achieve this goal, the College offers undergraduate programs leading to the Bachelor of Science in Business Administration. In addition, it offers graduate work for the degrees of Master of Business Administration (MBA), Master of Science (MS) in both Economics and Business Administration, Master of Accountancy (MAc), and the Doctor of Philosophy in Economics, and Management. For the degree of Master of Science in Business Administration (MS), students are currently being enrolled in the Management Department concentration options of Human Resources Management and Operations Management. Students may also enroll in the Masters of Management Information Systems (MMIS) program. The College of Business is accredited at the undergraduate and graduate levels by the American Assembly of Collegiate Schools of Business. Detailed information on graduate programs may be found in the *Graduate School Bulletin*.

Curriculum

The undergraduate curriculum includes a two-year Pre-Business Program required of all students and a two-year Professional Option Program. These programs provide a balanced course of study for all students, with approximately one-half of the hours in business and economics courses and one-half in courses offered outside the College. The courses required have been selected so that all students will have access to the "common body of knowledge" as designated by the American Assembly of Collegiate Schools of Business.

The Pre-Business Program, a plan followed by all business students in their freshman and sophomore years, provides a sound foundation of work in the arts and sciences, including courses in mathematics, humanities, social sciences and natural sciences. This lower division program also includes some of the introductory business courses.

The Professional Option Programs are offered through the School of Accountancy and the Departments of Finance; Economics; Management; and of Marketing and Transportation. The Professional Option plans allow each student to concentrate in an area of interest during the junior and senior years. The 10 options available include: Accountancy (AC), Finance (FI), International Business (IB), Economics (EC), Management (MN), Operations Management (OM), Human Resources Management (HRMN), Management Information Systems (MIS), Marketing (MK) and Transportation and Physical Distribution (TN). Through these programs, the College seeks to develop in its students the analytical, decision-making and communication skills required of managers who lead modern organizations.

Business Minor — A Business minor has been established within the College of Business for non-business majors. The courses required correspond with the common body of knowledge as specified by the American Assembly of Collegiate Schools of Business. Completion of these courses provides the basic understanding of the foundations of business administration and facilitates progress toward graduate work in business. The courses required for a business minor are: EC 301 (202 and 203 may be substituted), MN 310, AC 215 (211 and 212 may be substituted), MT 331 and FI 361. See course descriptions for appropriate prerequisites.

Admission to the College

Students entering the Pre-Business Program directly from high school or another college or university, in addition to meeting Auburn University's admission requirements, should have competence in the mathematics taught in high school geometry and second year algebra. Students also may transfer into the program from another school on campus if they have attained an overall GPA of at least 2.0 on all courses attempted at Auburn University.

Admission to Business Courses

A 2.0 cumulative GPA is required for enrollment in any Business course at the 300-level and above. This rule applies to both Business and non-Business students.

Graduation Requirements

To be graduated, business students must meet the hours and subject matter requirements of their curricula and must have an overall average of at least 2.0 on all courses attempted at Auburn University and meet all university requirements. At least 50 percent of the business credit hours required for the business degree must be taken at Auburn University.

Student Advising System

The Office of Student Affairs of the College of Business is responsible for orienting all new students, freshmen and transferees to the College. All students report each quarter to the Lowder Building, Suite 023, to plan their academic schedules and to obtain information.

Faculty are available to all students for academic counseling and career guidance. Students are encouraged to seek advice on professional and academic questions from department heads and faculty through personal arrangements or appointments made by Student Affairs.

Student Affairs is also available to assist students from another College or School on campus to pursue a second baccalaureate degree in the College of Business.

Cooperative Education Program

Business students are eligible to participate in AU's Cooperative Education Program. This program allows students to combine academic training with actual business experience.

Pre-Business Program

The requirements of the Pre-Business Program are given in the model below. Students who enter from high school register in this program until they complete all Pre-Business requirements. Students who enter by transfer and who have not yet completed all Pre-Business requirements, must register in the Pre-Business Program.

Before being admitted into a Professional Option Program, business students must complete all courses in the Pre-Business Program with a satisfactory academic record.

Specific professional options may differ in some details from the model presented here. Students should consult an advisor before selecting any classes.

Pre-Business Program

FRESHMAN YEAR												
First Quarter				Second Quarter				Third Quarter				
MH	160	Pre-Cal w/Trig.	5	MH	161	An. Geom. & Cal.	5	MH	169	Bus. Mh. w/Cal. App.	5	
CSE	100	Intr. PC	3			Core Science I (p. 16)	5			Core Science II (p. 16)	5	
EH	110	Eng. Comp.	5			Core History II (p. 16)	3			Core History III (p. 16)	3	
		Core History I (p. 16)	3	U	101	Soc., Cult. & Environ.	3	U	102	Political Economy	3	
SOPHOMORE YEAR												
U	103	Indiv. & Soc.	3	COM	100	Prof. Comm.	3	PA	102	or 219	Ethics	5
EH	220	Great Books I	5	EH	221	Great Books II	5	AC	241	Bus. Law	5	
EC	202	Economics I	5	EC	203	Economics II	5			Elective	5	
AC	211	Prin. Acct. I	4	AC	212	Prin. Acct. II	4					

School of Accountancy

The Professional Option Program in Accountancy develops the student's ability to work effectively, to exercise mental discipline and to communicate orally and in writing. The student gains an appreciation of the accountant's high standard of integrity and objectivity in reporting and an awareness of the responsibility for self-education upon entering a career in accountancy.

The Professional Option Program is intended to attract to accountancy careers those students seeming to possess the potential for making a contribution to the advancement of accountancy and having the aptitude which indicates a reasonable chance for a successful career.

Students who plan to sit for the CPA Exam should consider a fifth year of study through the Master of Accountancy (MAc) Program. Beginning in 1995, those sitting for the CPA Exam in the State of Alabama must have completed a total of 150 semester hours or 225 quarter hours of post secondary education, including a baccalaureate degree at an accredited college or university, with a concentration in accounting.

A student who does not meet the admission requirements for the graduate program must complete the 192-hour requirement of the undergraduate program to receive a B.S. degree in Business Administration with a professional option in Accountancy.

Students planning to enroll in the Master of Accountancy - Taxation Concentration are strongly encouraged to take AC 614 as it is a prerequisite to AC 630.

Curriculum in Accountancy (AC)**FRESHMAN AND SOPHOMORE YEARS**

(Same as Pre-Business Curriculum)

JUNIOR YEAR**First Quarter**

AC	311 Inter. Acct. I	5
MN	310 Prin. of Mgt.	5
MN	301 Statistics I	5
Elective		1

Second Quarter

EH	408 Business Writing	5
MN	314 Intro. to MIS	2
AC	312 Inter. Acct. II	5
FI	361 Prin. of Finance	5

Third Quarter

Core Fine Arts (p. 16)	3
AC 313 Inter. Acct. III	5
AC 319 Bus. Law Acct.	5
Elective	3

SENIOR YEAR

MT	331 Prin. of Mkt.	5
AC	417 Cost Acct.	5
AC	314 Income Tax	5

Elective *	5
Elective **	5
AC 415 Acct. Sys.	5

AC	416 Auditing	5
Elective		3
MN	480 Strategic Mgt.	5
Elective		3

TOTAL — 192 QUARTER HOURS

* Non fifth-year students may take one elective from AC 611, 612 or 614 if they meet Graduate School requirements for an undergraduate to enroll in a graduate course.

** At least 4 elective hours must be selected in courses outside of the College of Business.

Department of Economics**Business Economics**

The Business Economics curriculum provides maximum flexibility and broad-based preparation for future employment opportunities. Graduates are prepared for entry-level positions in many areas of business activity. In addition, the Economics Option provides excellent preparation for graduate or professional studies. (See also Economics Major in the College of Liberal Arts.)

Curriculum in Business Economics (EC)**FRESHMAN AND SOPHOMORE YEARS**

(Same as Pre-Business Curriculum)

JUNIOR YEAR**First Quarter**

EC	302 Inter. Mic.-Econ.	5
FI	361 Prin. of Fin.	5
MN	310 Prin. of Mgt.	5

Second Quarter

EC	556 Inter. Mac.-Econ.	5
MN	301 Statistics I	5
Elective		5

Third Quarter

MT	331 Prin. of Mkt.	5
Dept. Elect. *		5
MN	314 Intro. MIS	2
Core Fine Arts (p. 16)		3

SENIOR YEAR

EH	408 Business Writing	5
EC	554 Hist. Ec. Thought	5
Dept. Elect. *	.....	5
Elective	.....	3

Dept. Elect. *	5
Elective **	5
Elective	5
Elective	2

MN 480 Strategic Mgt.	5
Dept. Elect. *	5
Elective	5

TOTAL — 192 QUARTER HOURS

* Department Elective — any EC course other than EC 206 or 301.

** At least 4 elective hours must be selected in courses outside of the College of Business.

Minor in Economics: Completion of EC 202 and 203 (or AEC 202 and 203) is a prerequisite for the Economics minor. Students who have met that prerequisite can qualify for a minor in economics by completing any five additional 5-hour economics courses from the following list: EC 302, 330, 340, 350, 360, 471, 502, 552, 555, 556, 565, 568, 571, 575, 580.

Students who choose a non-business major (i.e., science, liberal arts, engineering, etc.) often find themselves in economics and business settings such as running a business, department, school, project or agency where economic education is quite valuable. A minor in economics will enable students to improve their understanding of how business firms interact with suppliers, customers and employees given the legal and institutional constraints they confront. By mastering the material, a student will gain considerable insight into the challenges of successfully managing resources and/or firms. This minor gives non-economics majors an opportunity to study economics in depth. Therefore, the minor in economics will make economics more accessible to the general student body.

Department of Finance**Finance**

The influence and responsibilities of financial executives have expanded dramatically in recent years. Financial officers are involved in the most profound decisions affecting the strategy of business operations. They decide to expand, merge, contract and change. They are concerned not only with the pricing of products, but with the initial decision to produce

them. All aspects of business affairs ultimately reduce to dollar terms, and the financial officers' intimate knowledge of the intricacies of financial operations places them in a vital role in corporate management.

The Professional Option Program in Finance offers students an opportunity to specialize in sub areas of finance. Courses in real estate are available.

Curriculum in Finance (FI)

FRESHMAN AND SOPHOMORE YEARS

(Same as Pre-Business Curriculum)

JUNIOR YEAR

First Quarter			Second Quarter			Third Quarter		
MN	301 Statistics I	5	AC	311 Inter. Acct. I	5	AC	312 Inter. Acct. II	5
AC	213 Mgr. Cost & Budget	4	FI	363 Adv. Fin.	5	FI	464 Investments	5
FI	361 Prin. of Fin.	5	MN	310 Prin. of Mgt.	5	FI	367 Fin. Inst.	5
Core Fine Arts (p. 16)			3			MN	314 Intro. to MIS	2

SENIOR YEAR

MT	331 Prin. Mkt.	5	EH	408 Business Writing	5	MN	480 Strategic Mgt.	5
Elective		4	Elective ***		5	Elective		4
Fin. Elective *		5	Fin. Elective *		5	Des. Elective **		5
			Elective		3			

TOTAL — 192 QUARTER HOURS

* **FINANCE ELECTIVES:** FI 423 Real Estate Fin. (5), 463 Fin. Mgt.-Cases (5), 466 Sec Anal. & Port. Mgt. (5), 469 Mgt. of Fin. Inst. (5), 471 Utility Finance (5).

** **DESIGNATED ELECTIVE:** A designated elective may be chosen from among any of the 300-, 400-level AC or FI courses, exclusive of AC or FI 400 or 490 or 340.

*** At least 4 elective hours must be selected in courses outside of the College of Business.

International Business

The International Business Option provides the student with the opportunity to develop analytical and decision-making skills necessary for effective participation in the global challenge facing American business today. The curriculum is designed to emphasize the additional risks encountered by international business firms and to enable the student to acquire proficiency in a foreign language including specialized business terminology. (See also Foreign Languages — International Trade Major in the College of Liberal Arts.)

Curriculum in International Business (IB)

FRESHMAN YEAR

First Quarter			Second Quarter			Third Quarter		
MH	160 Pre-Cal. w/Trig.	5	MH	161 An. Geom. & Cal.	5	MH	169 Bus. Math w/Cal. App.	5
Foreign Language *		5	CSE	100 Intro PC	3	U	102 Political Economy	3
EH	110 Eng. Comp.	5	Core History I (p. 16)		3	Core History II (p. 16)		3
			U	101 Soc., Cult. & Environ.	3	Foreign Language *		5
			Foreign Language *		5			

SOPHOMORE YEAR

Core History III (p. 16)		3	EH	220 Great Books I	5	EH	221 Great Books II	5
U	103 Individual & Society	3	EC	202 Econ. I	5	EC	203 Econ. II	5
AC	211 Prin. Acct. I	4	AC	212 Prin. Acct. II	4	Foreign Language *		5 or
Foreign Language *		5 or	Foreign Language *		5 or	Foreign Language		4 and
Foreign Language		4 and	Foreign Language		4 and	Elective		1
Elective		1	Elective		1			

JUNIOR YEAR

MT	331 Prin. Mkt.	5	Core Science I (p. 16)		5	Core Science II (p. 16)		5
FI	361 Prin. of Fin.	5	MN	310 Prin. of Mgt.	5	MN	314 Intro. to MIS	2
MN	301 Statistics I	5	EH	408 Business Writing	5	Bus. Concen. **		5
For. Lang. Conv. *		3	For. Lang. Comp. *		3	FI	451 Multinat'l Fin.	5

SENIOR YEAR

EC	571 Intl. Econ.	5	Elective		2	MN	480 Strategic Mgt.	5
PA	102 Intro. to Ethics	or	Bus. Concen. **		5	Bus. Concen. **		5
PA	219 Bus. Ethics	5	AC	241 Bus. Law	5	Elective		2
For. Bus. Lang. *		3	Core Fine Arts (p. 16)		3			

TOTAL — 192 QUARTER HOURS

* Language sequence to be taken exclusively in French, Spanish or German. **FRENCH:** FR 101, 102, 103, 201, 202, 203, 301, 302, 321. **GERMAN:** GR 101, 102, 103, 201, 202, 203, 301, 302, 401. **SPANISH:** SP 101, 102, 103, 201, 202, 203, 303, 304 and one of the following, 320, 321 or 322.

** A Business Concentration must be selected from one of the following areas. **Economics:** EC 302, 556 and any 500-level economics elective. **Finance:** FI 363, 367 and 464. **Human Res. Mgt.:** MN 342, 443 and any one of MN 346, 501, 547, 550, 551, 553. **Marketing (choice of three items from):** MT 332, 333, 485, 341, 372, 373, 440. **Operations Mgt.:** MN 380, 386 and 387. **MIS:** MN 307, 401 and 483.

Department of Management

The Management Program prepares students in basic business functions as well as the process of management and the use of technology to support these functions and processes.

The professional options within the Management Department are designed to impart knowledge which will assist future managers to be good decision makers for their organizations. The professional options available are Operations Management, Management, Human Resources Management and Management Information Systems.

Operations Management

The program prepares students for positions in manufacturing, service and consulting organizations. Students may choose between two concentrations: Operations & Systems Analysis or Production and Planning Control. The Operations & Systems Analysis concentration combines operations management courses with management information systems courses. This concentration prepares students for positions such as staff consultant and systems analyst. The Production Planning & Control concentration provides students with the opportunity to combine operations management courses in materials management, quality management and operation strategy with a logical grouping of electives in areas such as purchasing, distribution and labor relations. This concentration prepares students for positions such as inventory analyst, materials manager, quality control analyst, production planner and other plant supervisory positions.

Curriculum in Operations Management (OM)

FRESHMAN AND SOPHOMORE YEARS

(Same as Pre-Business Curriculum)

JUNIOR YEAR

First Quarter		Second Quarter		Third Quarter	
MN 310 Prin. of Mgt.	5	MN 380 Prin. Op. Mgt.	5	MN 381 Mgt. Decision Making	5
MT 331 Prin. of Mkt.	5	MN 314 Intro. to MIS	2	Core Fine Arts (p. 16)	3
MN 301 Statistics I	5	FI 361 Prin. of Fin.	5	Concentration *	5
		EH 408 Business Writing	5	Elective	5

SENIOR YEAR

MN 386 Mat. Mgt. I	5	Concentration *	5	MN 480 Strategic Mgt.	5
MN 474 Quality Assur.	5	Elective	5	MN 484 Oper. Mgt. Pol.	5
Concentration *	5	Elective	5	Concentration *	5

TOTAL — 192 QUARTER HOURS

* Choose one of the following concentrations: (A) Operations & Systems Analysis — Required are MN 307, 401 and one Concentration Elective (5 hours) — MN 387, 404, 483. (B) Production Planning & Control: Required are MN 387 and Concentration Electives (14/15 hours) — AC 213, MN 307, 308, 342, 346, 374, 385, 401, 404, 414, 415, 440, 443, MT 341, 372, 373, 434, 438, 439, 440, 474, 477.

Management

The Management Professional Option prepares students to assume managerial and staff responsibilities in business, government and non-profit organizations. Emphasis is on broad management training rather than specialization in a particular industry. In addition to a general Management concentration, a more specialized program in Technology Management is available for students whose career plans may focus on a technology-based field.

Curriculum in Management (MN)

FRESHMAN AND SOPHOMORE YEARS

(Same as Pre-Business Curriculum)

JUNIOR YEAR

First Quarter		Second Quarter		Third Quarter	
MN 301 Statistics I	5	MT 331 Prin. of Mkt.	5	MN 342 Hum. Res. Mgt.	5
AC 213 Mgt. Cost & Bdg.	4	MN 346 Org. Behavior	5	Bus. Elective	5
MN 310 Prin. of Mgt.	5	FI 361 Prin. of Fin.	5	EH 408 Business Writing	5
Core Fine Arts (p. 16)	3	MN 314 Intro. to MIS	2		

SENIOR YEAR

Fin. Elective	5	Mgt. Elective	5	MN 480 Strategic Mgt.	5
Int'l Elective	5	Elective *	5	Mkt. Elective	5
MN 380 Prin. of Oper. Mgt.	5	Elective	5	Elective	3
				Elective	3

TOTAL — 192 QUARTER HOURS

* At least 4 elective hours must be selected in courses outside of the College of Business.

A concentration may be obtained by taking College of Business electives listed below:

General Management Concentration: Management (choose 1) - MN 307, 401, 404, 405, 410, 414, 415, 420, 421, 440, 443, any 500-level MN elective; Finance (choose 1) - FI 320, 323, 362, 363, 367, 423, 451, 484; Marketing (choose 1) - MT 242, 255, 332, 333, 341, 372, 373, 439, 440, 485; International (choose 1) - MN 410, MT 440, FI 451, EC 571; Business Elective - choose from any of the above business electives or EC 360.

Technology Management Concentration: (a) Replace FI and MT electives with two Operations Management electives. (b) Replace BUS and MN electives with two Management Information Systems electives.

Human Resources Management

The Human Resources Management Program provides a comprehensive education in human resources management. Primary goals are to provide knowledge oriented toward practical, on-the-job applications and prepare students for entry-level positions in private and public sector organizations. Beyond the strong foundation in human resources, opportunities are provided for students to take courses relating to other areas such as information systems, service industry operations and strategic management.

Curriculum in Human Resources Management (HRMN)

FRESHMAN AND SOPHOMORE YEARS

(Same as Pre-Business Curriculum)

First Quarter			JUNIOR YEAR			Third Quarter		
			Second Quarter					
MN	310 Prin. of Mgt.	5	MN	443 Labor Relat.	5	MN	346 Org. Behavior	5
MT	331 Prin. of Mkt.	5	EH	408 Business Writing	5	FI	361 Prin. of Fin.	5
MN	301 Statistics I	5	MN	342 Hum. Res. Mgt.	5	MN	314 Intro. to MIS	2
						Elective		5
			SENIOR YEAR					
MN	501 Labor Rel. Law	5	MN	546 Pers. Adm. Leg.	5	MN	480 Strategic Mgt.	5
MN	550 Pers. Sel. & Pl.	5	MN	551 Manpower Plan	5	MN	547 Emp. Comp.	5
Core Fine Arts (p. 16)		3	HRMN Elective **	5		Elective		5
Elective *		5						

TOTAL — 192 QUARTER HOURS

* At least 4 elective hours must be selected in courses outside of the College of Business.

** HRMN Electives are as follows: MN 552, 553, ISE 302, PG 350, 358, 401, 505, EC 350, SOC 304, 508, 518, COM 340, 441 and 480.

Management Information Systems

Businesses devote large amounts of resources to the systems that provide vital operational information. It is the responsibility of information systems (IS) professionals to manage these systems efficiently and effectively. The MIS Program prepares students for managerial and staff positions in the field, such as programmer-analyst, systems analyst, database administrator and telecommunications administrator, plus sales and training positions that require an understanding of information technology. The emphasis of the MIS Program is the management and use of information technology, including the skills to use it, the understanding to plan for, analyze and manage it, and the knowledge to employ it in the solution of business opportunities and problems. MIS instruction consists of hands-on computer use, lecture, discussion, field trips, demonstrations, presentation by practitioners, applied team projects in the business community and case studies. Students are cautioned that 300- and 400-level MIS courses have enforced prerequisites and an earned grade of C or better must be obtained for all prerequisites to 400-level courses.

Curriculum in Management Information Systems (MIS)

FRESHMAN AND SOPHOMORE YEARS

(Same as Pre-Business Curriculum)

JUNIOR YEAR									
First Quarter			Second Quarter			Third Quarter			
MT	331 Prin. of Marketing	5	FI	361 Prin. of Fin.	5	MN	308 Adv. Prog. & App.	5	
MN	310 Prin. of Mgt.	5	MN	307 Bus. Comp. Appl.	5	MN	401 Analysis & Design	5	
MN	301 Statistics	5	MN	380 Prin. Oper. Mgt.	5	EH	408 Business Writing	5	
MN	314 Intro. to MIS	2	Core Fine Arts (p. 16)			3			
SENIOR YEAR									
MN	404 Telecom. & Netw.	5	MIS Elective			5	MN	480 Strategic Mgt.	5
MN	483 Data Base Mgt.	5	MIS Elective			5	Bus. Elective *		
Elective **		5	Elective			5	Elective		

TOTAL — 192 QUARTER HOURS

* A Business Elective is a course in the College of Business at the 300-level or above or CSE 200 or MN 207.

** At least 4 elective hours must be selected in courses outside of the College of Business.

Department of Marketing and Transportation

Marketing majors discover the interrelationship of marketing to other management tools and prepare themselves for executive/managerial careers involving functional areas such as advertising, channel and product decision-making, pricing, retailing and strategic market planning. Transportation and Physical Distribution majors prepare for careers in carrier, physical distribution and industrial traffic management and for assignments in urban transportation and development planning, and as traffic and transportation and distribution specialists.

Curriculum in Marketing (MK)

FRESHMAN AND SOPHOMORE YEARS

(Same as Pre-Business Curriculum)

JUNIOR YEAR

First Quarter		Second Quarter		Third Quarter	
MN	301 Statistics I 5	MN	310 Prin. of Mgt. 5	FI	361 Prin. of Fin. 5
MT	331 Prin. of Mkt. 5	MT	341 Buyer Behavior 5	MN	314 Intro. to MIS 2
Core Fine Arts (p. 16)	..... 3	MT	373 Intro. to Bus. Logistics 5	Marketing Elective *	..... 5
Elective	..... 5			EH	408 Business Writing 5
SENIOR YEAR					
MT	436 Mkt. Res. 5	Marketing Elective *	..... 5	MT	498 Mkt. Strategy 5
Elective	..... 5	Department Elective **	..... 5	MN	480 Strategic Mgt. 5
Marketing Elective *	..... 5	Elective	..... 5	Elective	..... 5

TOTAL — 192 QUARTER HOURS

* Marketing Electives — MT 432, 433, 434, 437, 438, 439, 440, 470, 472, 477, 485, 581, 582, 583, 584, 585.

** Departmental Electives — Any marketing elective not counted towards the 15 hours of required marketing electives or MT 372, 474, 475, 476, 588.

Note: Consistent with AACSB guidelines, all marketing majors must take four hours of their electives outside of the College of Business.

Minor in Marketing: The objective of the marketing minor is to provide students with a general understanding of marketing theory and practice that would complement their major. Marketing includes discovering and understanding customer needs and executing a marketing strategy that enables a business to profitably meet those needs. Marketing strategy includes functional areas such as advertising, personal selling, channel and product decision-making, retailing and strategic market planning.

The marketing minor will consist of 25 hours of course work to be taken from the following list of courses. Although not specifically listed as a requirement, students will have to complete MT 331 as a prerequisite for all marketing courses.

Elective courses allowed to count toward the minor: MT, 341, 432, 433, 434, 436, 437, 438, 439, 440, 470, 472, 477, 485, 490, 581, 582, 583, 584, 585.

Curriculum in Transportation and Physical Distribution (TN)

FRESHMAN AND SOPHOMORE YEARS

(Same as Pre-Business Curriculum)

JUNIOR YEAR

First Quarter		Second Quarter		Third Quarter	
AC	213 Mgrl. Cost & Bud. 4	MT	372 Prin. of Transp. 5	MT	373 Intro. to Bus. Logistics 5
MN	301 Statistics I 5	MN	310 Prin. of Mgt. 5	FI	361 Prin. of Fin. 5
EH	408 Business Writing 5	MT	331 Prin. of Mkt. 5	MT	474 Ind. Traf. Mgt. 5
Elective	..... 3			MN	314 Intro. to MIS 2
SENIOR YEAR					
MT	475 Tran. & Pub. Pol. Iss. 5	MT	476 Carrier Mgt. 5	MN	480 Strategic Mgt. 5
Core Fine Arts (p. 16)	..... 3		Dir. Elect. ** 5		Dir. Elect. ** 5
Dept. Elective *	..... 5		Elective *** 5		Elective 5
Elective	..... 3				

TOTAL — 192 QUARTER HOURS

* Departmental Electives for Transportation and Physical Distribution: MT 341, 434, 437, 438, 439, 440, 477, 485, 588.

** Directed Electives. Report to a departmental advisor to select an approved career-oriented business or non-business elective. Bring your approval form to Student Affairs.

*** At least 4 elective hours must be selected in courses outside of the College of Business.

College of Education

RICHARD C. KUNKEL, *Dean*
VIRGINIA HAYES, *Associate Dean*
JEFFREY GORRELL, *Associate Dean*
ROBERT E. ROWSEY, *Assistant Dean*
EMILY A. MELVIN, *Assistant Dean*

THE COLLEGE OF EDUCATION is accredited by the National Council for Accreditation of Teacher Education for the preparation of teachers and school service personnel with the doctor's degree as the highest degree approved. Emphasis in all programs is upon the preparation of personnel who will be able to meet successfully the performance demands of the roles they assume in their professional positions.

Undergraduate Curricula

Bachelor's degree options in the College of Education are the Bachelor of Science in Education and the Bachelor of Music Education.

Teaching and non-teaching programs are offered through the College of Education. Teaching programs are presented first, followed by non-teaching programs.

Scholastic Requirements

The Selective Admission and Retention Program in Teacher Education — In recognition of responsibilities to the schools in which its graduates teach, the College maintains a program of selective admission and retention of candidates for the teaching profession. This program is designed to assure that no candidates are recommended for admission to the Teacher Education Program, the professional internship or certification unless they are deemed competent in their university studies and professional performance.

Transfer Requirements — A minimum GPA of 2.5 (on a four-point scale) on all college courses attempted and on all courses attempted in the intended program is required to transfer into the College of Education.

Admission to Teacher Education in Early Childhood Education and Elementary Education Programs — Students entering these programs Summer 1997 and after are subject to the following admission procedures:

1. Effective Summer Quarter 1997, all freshmen entering the Early Childhood Education program will be classified 01 GCEE; all freshmen entering the Elementary Education program will be classified 01 GCEE. Beginning Winter Quarter 1999, admission to Teacher Education will occur once each quarter (excluding Summer) in each of these programs.
2. Students transferring into the College of Education Summer Quarter 1997 or after will be subject to these procedures, if any of the following apply: (a) they started to college anywhere Summer Quarter 1997 or after; (b) they will not have completed 90 quarter hours in the program prior to the end of Winter Quarter 1999.
3. The procedures/criteria for admission to Teacher Education in these two programs follow:
 - A. Students must submit a formal written application for admission to Teacher Education after completing at least 90 quarter hours applicable to their program, usually at the end of the sophomore year. To be eligible to apply, the following criteria must be met: (1) a minimum GPA of 2.5 (on a four-point scale) on all college courses attempted; (2) satisfactory performance on a written English language competency examination; (3) successful performance in the pre-professional field experience (pre-teaching); (4) completion of a minimum of 30 hours at Auburn University in the program of study for the major. The cumulative Auburn GPA and the program GPA must be at least 2.5.
 - B. All students meeting the above criteria who are applying for junior-level admission to each program will be ranked by GPA from 4.0 downward on all college courses attempted. There will be 17 candidates for Early Childhood Education and 25 candidates for Elementary Education each quarter (excluding Summer).
 - C. The ranked candidates will be eligible to proceed to the professional interview for admission to Teacher Education.

This procedure will continue until all slots for both programs are filled for the next quarter. Students who apply and are not selected for admission to Teacher Education in these two programs will be counseled as to their options in education, but may not continue to pursue either of these majors.

Admission to Teacher Education in All Programs except Early Childhood Education and Elementary Education — Students must submit a formal written application for admission to Teacher Education after completing a minimum of 90 quarter hours in the program, usually at the end of the sophomore year. Criteria for admission are:

1. a minimum cumulative Auburn University GPA of 2.5.
2. a minimum program GPA of 2.5 on all college courses attempted.
3. satisfactory performance on a written English language competency examination.
4. satisfactory performance in a professional interview examining oral communication skills, personal characteristics, interests and aptitudes consistent with the requirements for successful teaching.
5. successful performance in the pre-professional field experience (pre-teaching).

Students who fail to meet these criteria upon initial application may submit new evidence in an effort to satisfy any and/or all of the above standards.

Retention in Teacher Education Programs — While retention in the Teacher Education Program is based on the continuous evaluation of students, a formal evaluation takes place as a prerequisite for admission to the professional internship. Requirements for admission to the professional internship are: (1) admission to the Teacher Education Program; (2) completion of appropriate courses in the area of specialization as specified on the program checklist; (3) a minimum GPA in each of the following: (a) Auburn University cumulative, (b) professional teacher education, (c) the teaching major(s) and overall program; (4) demonstrated potential for teaching.

To be eligible for graduation with recommendation for teacher certification, students will be expected to complete the requirements identified above and demonstrate readiness to teach through a successful internship and exit evaluation.

Persons with degrees may apply for study in a curriculum leading to professional certification. The above standards must be met to qualify for recommendation for certification.

Applications and specific information about the criteria for admission to teacher education are available from the Teacher Education Services Office in Haley Center 3464.

Professional liability (tort) insurance is required for students in designated majors.

Program Options, Teaching

The following table shows teacher education program options available in the College of Education. Programs appear by department.

Department and Program	Grade Levels				
	N-3	1-6	4-8	7-12	N-12
Curriculum & Teaching					
Early Childhood	X				
Elementary		X			
General Science			X	X	
Language Arts			X	X	
Mathematics			X	X	
Music, Instrumental					X
Music, Vocal Choral					X
Social Science			X	X	
Two majors from:				X	
Biology, Chemistry, English, French, Geography, German, History, Mathematics, Physics*, Political Science, Spanish					
Health & Human Performance					
Physical Education					X
Rehabilitation & Special Education					
Early Childhood Special Education	X				
Mild Learning / Behavior Disabilities					X
Vocational & Adult Education					
Agribusiness Education				X	
Business Education				X	
Industrial Education (T&I)				X	
Marketing Education				X	

*Physics major requires mathematics as second major.

Requirements for Fields of Specialization

Curriculum models appear below. Curriculum check lists are available in the Office of Teacher Education Services, 3464 Haley Center.

Curriculum and Teaching

Curriculum in Early Childhood

FRESHMAN YEAR			FRESHMAN YEAR			Third Quarter		
First Quarter			Second Quarter					
Core English (p. 16)	5		Core Philosophy (p. 16)	5		Core Mathematics (p. 16)	5	
Core History (p. 16)	3		Core History (p. 16)	3		Core History (p. 16)	3	
Core Biology (p. 16)	5		Core Biology (p. 16)	5		Core Fine Arts (p. 16)	3	
CTC 102 Orientation	1		Core Social Science (p. 16)	3		Core Social Science (p. 16)	3	
Core Social Science (p. 16)	3		ROTC or HHP 195	1-2		Elective	4	
ROTC or PE	1-2					ROTC or Elective	0-1	
SOPHOMORE YEAR								
EH 220 Great Books I	5		EH 221 Great Books II	5		MH Approved Course	5	
PS 200 Found. Physics	5		MH Approved Course	5		Approved Physical Science	5	
MU 271 Intr. Music	3		CTC 355 Surv. EC	3		HDF 301 Early & Mid. Ch. Dev.	5	
HHP 211 Motor Dev.	3		EM 200 Ed. Media	2		ROTC or Elective	1	
ROTC or Elective	0-1		ROTC or Elective	1				
JUNIOR YEAR								
CTC 301 Ch. Const. Soc. Cog.	3		CTC 302 Ch. Const. Number	3		CTC 303 Ch. Const. Sym. Func.	4	
CTM 304 Music & Rel. Arts	5		CTC 320 Const. Theory *	3		CTC 321 Nat. of Learner *	3	
CTR 370 Reading	5		CTR 371 Reading *	5		CTC 315 Lang. Dev.	4	
AT 301 Elem. Sch. Art	4		FED 300 Ed. Psychology	5		RSE 310 Surv. of Excep.	5	
						EDL 401 Org. Adm. Sc. *	2	
SENIOR YEAR								
CTC 420 Const. Tchr. *	3		CTC 421 Const. Tchr. *	3		CTC 425 Intern *	15	
CTC 495a Prac. Pres. *	4		CTC 495b Prac. Prim. *	4				
FED 350 Cult. Fnd. *	5		FED 400 Meas. and Eval. *	5				
EM 510 Media	4		Core English (p. 16)	5				
CCP 322 Hum. Rel. *	2							

TOTAL HOURS — 204

* Prerequisite Admission to Teacher Education.

Curriculum in Elementary Education

FRESHMAN YEAR			FRESHMAN YEAR			Third Quarter		
First Quarter			Second Quarter					
Core English (p. 16)	5		Core Fine Arts (p. 16)	3		Core Philosophy (p. 16)	5	
Core History (p. 16)	3		Core History (p. 16)	3		Core History (p. 16)	3	
Core Biology (p. 16)	5		Core Biology (p. 16)	5		Core Social Science (p. 16)	3	
CTE 102 Orientation	1		Core Math (p. 16)	5		Concentration	5	
ROTC or PE	1-2		ROTC or HHP 195	1-2		ROTC or Elective	0-1	
SOPHOMORE YEAR								
EH 220 Great Books I	5		EH 221 Great Books II	5		HP 410 Hlth. and PE Elem.	4	
PS 200 Found. Physics	5		Approved Math	5		Core Social Science (p. 16)	3	
MH 285 Elem. Math	5		Core Social Science (p. 16)	3		Concentration	5	
EM 200 Educ. Media	2		Approved Earth/Space Sci.	5		Approved Elective	3	
ROTC or Elective	0-1		ROTC or Elective	1		ROTC or Elective	1	
JUNIOR YEAR								
Core English (p. 16)	5		FED 350 Cult. Fnd. Ed. *	5		CTM 304 Mus. and Rel. Arts	5	
FED 300 Educ. Psych.	5		CCP 322 Hum. Rel. Trn. Ed. *	2		EDL 401 Org. Adm. Sch. *	2	
MU 271 Intro. to Music	3		AT 301 Elem. Sch. Art	4		RSE 310 Surv. Excep.	5	
Concentration	5		Concentration	5		CTR 370 Fnd. Lit. Inst. I	5	
SENIOR YEAR								
CTE 303 Cur. I Soc. Sci. *	5		CTE 302 Curr. Lang. Arts *	5		CTE 425 Internship *	15	
CTE 450 Spec. Top. Beh. Mgt. *	2		CTE 402 Cur. Math. *	5				
EM 510 Media for Children	4		CTE 403 Cur. Sci. *	5				
CTR 371 Fnd. Lit. Inst. II *	5		FED 400 Meas. & Eval. *	5				

TOTAL HOURS — 204

* Prerequisite Admission to Teacher Education.

Curriculum in General Science (Middle School)

FRESHMAN YEAR			FRESHMAN YEAR			Third Quarter		
First Quarter			Second Quarter					
Core English (p. 16)	5		Core Fine Arts (p. 16)	3		Core Social Science (p. 16)	3	
Core Social Science (p. 16)	3		Core Social Science (p. 16)	3		GL 110 Physical & Lab	5	
Core Math (p. 16) (MH 161 req.)	5		BI 101 Prin.	5		BI 102 Plant	5	
CTS 102 Orientation	1		Core Philosophy (p. 16)	5		EM 200 Ed. Media	2	
ROTC or PE	1-2		ROTC or HHP 195	1-2		ROTC or Elective	0-1	

College of Education

SOPHOMORE YEAR

EH 220 Great Books I	5	EH 221 Great Books II	5	CH Organic	5
CH 103 Fund. Chem. I	4	CH 104 Fund. Chem. II	4	PS 206 Physics II/Lab	5
CH 103L Gen. Chem. Lab	1	CH 104L Gen. Chem. Lab	1	Core History (p. 16)	3
Core History (p. 16)	3	Core History (p. 16)	3	RSE 310 Survey Excep.	5
GL 111 Historical & Lab	5	PS 205 Physics I/Lab	5	ROTC or Elective	1
ROTC or Elective	0-1	ROTC or Elective	1		

JUNIOR YEAR

Core English (p. 16)	5	CH 300-500	5	PS/PHS/MTL 300-500	6
PS 207 Phys. III & Lab	4	PS 215 Astronomy	5	CTR 370/571 Reading *	5
AM/AY/GL/Space/Earth	5	BY/ZY/ENT/MB 300-500	5	FED 350 Cult. Fnd. *	5
FED 300 Ed. Psych.	5	CTD 419 Mid. Sch.	5		

SENIOR YEAR

BY/ZY/ENT/MB 300-500	5	Science 300-500 Concent.	10	CTS 425 Intern *	15
CTS 405 Tchg. Sci. *	3	CTS 410 Prog. Sci. *	3		
CCP 322 Hum. Rel. *	2	EDL 401 Org. Adm. *	2		
FED 400 Meas. Eval. Ed. *	5	CTS 415 Trends Sci. *	3		

TOTAL HOURS — 208

* Prerequisite Admission to Teacher Education.

Curriculum in General Science (High School)

FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
Core English (p. 16)	5	Core Fine Arts (p. 16)	3	Core Social Science (p. 16)	3
Core Social Science (p. 16)	3	Core Social Science (p. 16)	3	GL 110 Geology & Lab	5
Core Math (p. 16) (MH 161 req.)	5	BI 101 Prin.	5	BI 102 Plant	5
CTS 102 Orientation	1	Core Philosophy (p. 16)	5	EM 200 Ed. Media	2
ROTC or PE	1-2	ROTC or HHP 195	1-2	ROTC or Elective	0-1

SOPHOMORE YEAR

EH 220 Great Books I	5	EH 221 Great Books II	5	CH Organic	5
CH 103 Fund. Chem. I	4	CH 104 Fund. Chem. II	4	PS 206 Physics II/Lab	5
CH 103L Gen. Chem. Lab	1	CH 104L Gen. Chem. Lab	1	Core History (p. 16)	3
Core History (p. 16)	3	Core History (p. 16)	3	ROTC or Elective	1
GL 111 Geology & Lab	5	PS 205 Physics I & Lab	5		
ROTC or Elective	0-1	ROTC or Elective	1		

JUNIOR YEAR

Core English (p. 16)	5	CH 300-500	5	PS/PHS/MTL 300-500	6
PS 207 Physics III & Lab	4	PS 215 Astronomy	5	RSE 310 Surv. Excep.	5
AM/AY/GL Earth/Space	5	BY/ZY/ENT/MB 300-500	5	FED 350 Cult. Fnd. Ed. *	5
FED 300 Ed. Psych.	5	CTS 420 Sec. Sch.	5		

SENIOR YEAR

BY/ZY/ENT/MB 300-500	5	Science 300-500 Concent.	10	CTS 425 Intern *	15
CTS 405 Tchg. Sci. *	3	CTS 410 Prog. Sci. *	3		
CCP 322 Hum. Rel. *	2	EDL 401 Org. Adm. *	2		
FED 400 Meas. *	5	CTS 415 Trends Sci. *	3		
CTR 571 Reading *	5				

TOTAL HOURS — 208

* Prerequisite Admission to Teacher Education.

Curriculum in Music - Vocal/Choral

FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
Core English (p. 16)	5	Core Math (p. 16) **	5	Core Fine Arts (p. 16)	3
Core History (p. 16)	3	Core History (p. 16)	3	Core Science (p. 16)	5
MU 131 Mat. & Org.	5	MU 132 Mat. & Org.	5	Core History (p. 16)	3
MU 187 Applied	1	MUA 187 Applied	1	MU 133 Mat. & Org.	5
MU Ensemble	1	MU Ensemble	1	MUA 187 Applied	1
CTM 102 Orientation	1	MU Instrumental (Strings)	1	MU Ensemble	1
ROTC or PE	1-2	ROTC or HHP 195	1-2	MU Instrumental (Wind)	1
				ROTC or Elective	0-1

SOPHOMORE YEAR

Core Science (p. 16)	5	EH 220 Great Books I	5	EH 221 Great Books II	5
MU 231 Mat. & Org.	5	MU 232 Mat. & Org.	5	MU 233 Mat. & Org.	5
Core Social Science (p. 16)	3	Core Social Science (p. 16)	3	Core Social Science (p. 16)	3
MU Ensemble	1	EM 200 Educ. Media	2	MU Ensemble	1
MUA 187 Applied	1	MUA 187 Applied	1	MUA 187 Applied	1
MU Instrumental (Percussion)	1	MU Ensemble	1	ROTC or Elective	1
ROTC or Elective	0-1	ROTC or Elective	1		
		MU Ensemble	1		

College of Education

JUNIOR YEAR

FED 300 Educ. Psych.	5	FED 350 Cult. Fnd. Ed.*	5	CTM 495 Practicum	3
CTM 394 Elem. Inst. Music *	3	CTM 396 Elem Music Progs. *	3	MU 353 Music History III	3
MU 351 Music History I	3	MU 352 Music History II	3	MU 363 Conducting III	2
MU 361 Conducting I	2	MU 362 Conducting II	2	MUA 387 Applied	1
MUA 387 Applied	1	MUA 387 Applied	1	MU Ensemble	1
MU Ensemble	1	MU 442 Vocal Pedagogy	1	CCP 322 Hum. Rel. Trm. Ed. *	2
MU Fretted Instruments	1	MUA Ensemble	1	MU 553 Choral Lit.	3
CTR 571 Rdg. Content Area *	5				

SENIOR YEAR

RSE 310 Surv. Excep.	5	Core Philosophy (p. 16)	5	CTM 425 Internship *	15
FED 400 Meas. & Eval.*	5	MU 478 Choral Arrang.	3		
EDL 401 Org. Adm. Pub. Sch. *	2	Core English (p. 16)	5		
MU 411 Choral Tech.	3	CTM 595 Sec. Chor. Meth.*	3		
CTM 594 Mat./Org. Sch. Bands *	3	MUA 387 Applied	1		
MUA 387 Applied	1	MU Ensemble	1		
MU Ensemble	1				

TOTAL HOURS — 212

* Prerequisite Admission to Teacher Education.

Curriculum in Music - Instrumental

FRESHMAN YEAR

First Quarter	Second Quarter	Third Quarter
Core English (p. 16)	Core Math (p. 16) **	Core Fine Arts (p. 16)
Core History (p. 16)	Core History (p. 16)	Core Science (p. 16)
MU 131 Mat. & Org.	MU 132 Mat. & Org.	Core History (p. 16)
MUA 187 Applied	MUA 187 Applied	MU 133 Mat. & Org.
MU Ensemble	MU Ensemble	MUA 187 Applied
CTM 102 Orientation	MU Vocal	MU Ensemble
ROTC or PE	ROTC or HHP 195	ROTC or Elective
		MU Vocal

SOPHOMORE YEAR

Core Science (p. 16)	EH 220 Great Books I	EH 221 Great Books II
MU 231 Mat. & Org.	MU 232 Mat. & Org.	MU 233 Mat. & Org.
Core Social Science (p. 16)	Core Social Science (p. 16)	Core Social Science (p. 16)
MU Ensemble	EM 200 Educ. Media	MU Ensemble
MUA 187 Applied	MU Ensemble	MUA 187 Applied
MU Class Instrument	MUA 187 Applied	MU Class Instrument
ROTC or Elective	ROTC or Elective	ROTC or Elective
MU Vocal	MU Class Instrument	

JUNIOR YEAR

FED 300 Educ. Psych.	FED 350 Cult. Fnd. Ed.*	CTM 495 Practicum
CTM 394 Elem. Inst.*	CTM 396 Elem. Music Progs.*	CTR 571 Reading *
CCP 322 Hum. Rel. Trng.*	MU 352 Music History II	MU 353 Music History III
MU 351 Music History I	MU 362 Conducting II	MU 363 Conducting III
MU 361 Conducting I	MUA 387 Applied	MUA 387 Applied
MUA 387 Applied	MU Ensemble	MU Ensemble
MU Ensemble	MU Class Instrument	MU Class Instrument
MU Class Instrument	MU Fretted Instrument	

SENIOR YEAR

RSE 310 Surv. Exc.	Core Philosophy (p. 16)	CTM 425 Internship *
FED 400 Meas. & Eval.*	MU 477 or 537	
EDL 401 Org. Adm. Ed.*	Core English (p. 16)	
MU 409 March Tech.	CTM 595 Mat./Org. Sch. Bands *	
CTM 594 Mat./Org. Sch. Bands *	MUA 387 Applied	
MUA 387 Applied	MU Ensemble	
MU Ensemble		

TOTAL HOURS — 212

* Prerequisite Admission to Teacher Education.

Curriculum in General Social Science (Middle School)

FRESHMAN YEAR

First Quarter	Second Quarter	Third Quarter
Core English (p. 16)	Core Math (p. 16)	Core Philosophy (p. 16)
Core History (p. 16)	Core History (p. 16)	Core History (p. 16)
Core Science (p. 16)	Core Science (p. 16)	Core Social Science (p. 16)
Core Social Science (p. 16)	Core Social Science (p. 16)	CTS 102 Orientation
ROTC or PE	ROTC or HHP 195	EC 202 Econ. I
		ROTC or Elective

College of Education

SOPHOMORE YEAR

EH 220 Great Books I	5	EH 221 Great Books II	5	RSE 310 Surv. Exc.	5
ANT Approved	3	Core Fine Arts (p. 16)	3	PO 209 Intr. Gov't.	5
GY 214 Phys. Geog.	5	GY 215 Cultural	5	PG 201 Psychology	5
EC Approved	3	SOC 201 Intro. Soc.	3	EM 200 Ed. Media	2
ROTC or Elective	1	ROTC or Elective	1	ROTC or Elective	1

JUNIOR YEAR

PO 300-500	3	HY U.S. 300-500	5	HY U.S. 300-500	5
HY European 300-500	5	HY Asian 300-500	5	CTS 421 Soc. Sci. Concepts	5
PO 312/309 Comp./Internat.	5	CTD 419 Mid. Sch.	5	Core English (p. 16)	5
FED 300 Ed. Psych.	5	FED 350 Cult. Fnd.	5	CTR 370/571 Reading	5
GY Approved 300-500	3				

SENIOR YEAR

HY U.S. 300-500	5	CTS 415 Curr. Trnd.	3	CTS 425 Intern *	15
FED 400 Eval. Meas. *	5	EDL 401 Org. Adm. *	2		
CCP 322 Hum. Rel. *	2	HY Latin America 300-500	5		
CTS 405 Tchg. SS *	3				
CTS 410 Prog. SS *	3				

TOTAL HOURS — 208

* Prerequisite Admission to Teacher Education.

Curriculum in General Social Science (High School)

FRESHMAN YEAR

First Quarter

Core English (p. 16)	5
Core History (p. 16)	3
Core Science (p. 16)	5
Core Social Science (p. 16)	3
ROTC or PE	1-2

Second Quarter

Core Math (p. 16)	5
Core History (p. 16)	3
Core Science (p. 16)	5
Core Social Science (p. 16)	3
ROTC or HHP 195	1-2

Third Quarter

Core Philosophy (p. 16)	5
Core History (p. 16)	3
Core Social Science (p. 16)	3
CTS 102 Orientation	1
EC 202 Econ. I	5
ROTC or Elective	0-1

SOPHOMORE YEAR

EH 220 Great Books I	5	EH 221 Great Books II	5	RSE 310 Surv. Exc.	5
ANT Approved	3	Core Fine Arts (p. 16)	3	PO 209 Intr. Gov't.	5
GY 214 Phys. Geog.	5	GY 215 Cultural	5	PG 201 Psychology	5
ROTC or Elective	0-1	SOC 201 Intro. Soc.	3	EM 200 Ed. Media	2
		ROTC or Elective	1	ROTC or Elective	1

JUNIOR YEAR

HY European 300-500	5	HY U.S. 300-500	5	HY U.S. 300-500	5
PO 312/309	5	HY Asian 300-500	5	CTS 421 Soc. Sci. Concepts	5
CTS 420 Sec. Sch.	5	PO 300-500	3	Core English (p. 16)	5
FED 300 Ed. Psych.	5	FED 350 Cult. Fnd. *	5	EC Approved	5
		GY Approved 300-500	3		

SENIOR YEAR

HY U.S. 300-500	5	CTS 415 Curr. Trnd. *	3	CTS 425 Intern *	15
FED 400 Eval. Meas. *	5	EDL 401 Org. Adm. *	2		
CCP 322 Hum. Rel. Trn. Ed. *	2	CTR 571 Reading *	5		
CTS 405 Tchg. SS *	3	HY Latin American	5		
CTS 410 Prog. SS *	3	HY 300-500	5		

TOTAL HOURS — 213

* Prerequisite Admission to Teacher Education.

Curriculum in Language Arts (High School)

FRESHMAN YEAR

First Quarter

Core English (p. 16)	5
Core History (p. 16)	3
Core Science (p. 16)	5
CTS 102 Orientation	1
ROTC or PE	1-2

Second Quarter

Core Science (p. 16)	5
Core History (p. 16)	3
Core Math (p. 16)	5
TH Elective	2
ROTC or HHP 195	1-2

Third Quarter

Core Philosophy (p. 16)	5
Core History (p. 16)	3
CTS 205 Communication	3
COM 141 Group Dis.	5
ROTC or Elective	0-1

SOPHOMORE YEAR

EH 220 Great Books I	5	EH 221 Great Books II	5	RSE 310 Surv. Exc.	5
Core Social Science (p. 16)	3	Core Social Science (p. 16)	3	EH 403 Interpreting Texts	5
Core Fine Arts (TH 200 req.)	3	EM 200 Ed. Media	2	FED 300 Ed. Psych.	5
ROTC or Elective	0-1	TH Elective	3	Core Social Science (p. 16)	3
		JM 315 Basic Journalism	3	ROTC or Elective	1
		ROTC or Elective	1		

JUNIOR YEAR

Core English (EH 400 req.)	5	EH 470 or 471 Shakespeare	5	CTR 571 Reading *	5
CTS 501 Lang. Study	5	EH Linguistics Elective	5	EH 300-500	10
CTS 502 Rhet. Com.	5	FED 350 Cult. Fnd. *	5	JM 465 Hist./Prin. Journalism	5
COM Elective	5	EDL 401 Adm. Org. *	2		

College of Education

SENIOR YEAR

EH 300-500	5	EH 300-500	5	CTS 425 Intern *	15
FED 400 Meas. Eval. *	5	CTS 411 Tch. Lang. *	3		
CTR 576 Reading	5	CTS 412 Tch. Lit. *	3		
CCP 322 Hum. Rel. *	2	CTS 413 Tch. Comp. *	3		
		CTS 420 Secondary School	5		

TOTAL HOURS — 205

* Prerequisite Admission to Teacher Education.

Curriculum in Language Arts (Middle School)

FRESHMAN YEAR

First Quarter

Core English (p. 16)	5
Core History (p. 16)	3
Core Science (p. 16)	5
CTS 102 Orientation	1
ROTC or PE	1-2

Second Quarter

Core Science (p. 16)	5
Core History (p. 16)	3
Core Math (p. 16)	5
TH 200 Intro. Acting	3
ROTC or HHP 195	1-2

Third Quarter

Core Philosophy (p. 16)	5
Core History (p. 16)	3
CTS 205 Communication	3
COM 141 Grop Dis.	5
ROTC or Elective	0-1

SOPHOMORE YEAR

EH 220 Great Books I	5
Core Social Science (p. 16)	3
JM 315 Basic Journalism	3
Core Fine Arts (TH 201 req.)	3
ROTC or Elective	0-1

EH 221 Great Books II	5
Core Social Science (p. 16)	3
EM 200 Ed. Media	2
TH Elective	3
ROTC or Elective	1

RSE 310 Surv. Exc.	5
EH 403 Interpreting Texts	5
FED 300 Ed. Psych.	5
Core Social Science (p. 16)	3
ROTC or Elective	1

JUNIOR YEAR

Core English (p. 16) (EH 400 req.)	5
CTS 501 Lang. Study	5
CTS 502 Rhet. Com.	5
COM Elective	5

EH 470/471 Shakespeare	5
EH Linguistics Elective	5
FED 350 Cult. Fnd. *	5
EDL 401 Org. Adm. *	2

CTR 571 Reading *	5
EH 300-500	10
JM 465 Hist. & Princ. JM	5

SENIOR YEAR

EH 300-500	5
FED 400 Meas. Eval. *	5
CTR 576 Reading	5
CCP 322 Hum. Rel. *	2

EH 300-500	5
CTS 411 Tch. Lang. *	3
CTS 412 Tch. Lit. *	3
CTS 413 Tch. Comp. *	3
CTD 419 Middle School	5

CTS 425 Internship *	15
----------------------------	----

TOTAL HOURS — 205

* Prerequisite Admission to Teacher Education.

Curriculum in Mathematics (High School)

FRESHMAN YEAR

First Quarter

Core English (p. 16)	5
Core History (p. 16)	3
MH 161 An. Geom. & Calc. I	5
Core Social Science (p. 16)	3
CTS 102 Orientation	1
ROTC or PE	1-2

Second Quarter

Core Philosophy (p. 16)	5
Core History (p. 16)	3
MH 162 An. Geom. & Calc. II	5
Core Social Science (p. 16)	3
ROTC or HHP 195	1-2

Third Quarter

Core History (p. 16)	3
MH 163 An. Geom. & Calc. III	5
Core Social Science (p. 16)	3
Core Science (p. 16)	5
ROTC or Elective	0-1

SOPHOMORE YEAR

EH 220 Great Books I	5
FED 300 Ed. Psych.	5
MH 264 Calculus IV	5
CTS 204 Comp. Prog.	3
ROTC or Elective	1

EH 221 Great Books II	5
Core Science (p. 16)	5
MH 265/269 Dif. Equations	3
ROTC or Elective	1

RSE 310 Surv. Exc.	5
Core Fine Arts (p. 16)	3
MH 266/337 Lin. Alg.	3
EM 200 Educ. Media	2
Electives	3
ROTC or Elective	1

JUNIOR YEAR

MH 538 Geometry	5
DMS 371 Discrete Math I	3
FED 350 Cult. Fnd. *	5
CTS 420 Secondary School	5

MH Group Requisite II **	5
CCP 322 Hum. Rel. *	2
MH 331/333 Alg./Grop. Theory	3
CTS 404 Applied Tech. *	3
Electives	5

DMS 560 Statistics	5
FED 400 Meas. Eval. *	5
MH 301 Hist. Math	3
CTD 401 Tch. Math *	4

SENIOR YEAR

Core English (p. 16)	5
MH Group Requisite I **	5
CTS 402 Tch. Math I *	3
EDL 401 Org. Adm. *	2
Electives	2

CTR 571 Reading *	5
CTS 403 Tch. Math II *	3
MH Group Requisite III ***	5
MH Elective	4

CTS 425 Internship *	15
----------------------------	----

TOTAL HOURS — 204

* Prerequisite Admission to Teacher Education.

** Group Requisite I — DMS 512, 573, 575

*** Group Requisite II — MH 539, 543, 544, 588

**** Group Requisite III — DMS 500, 517, 518, 520, 530, 577, MH 334, 500, 508, 520, 537, 563, 564, 584

Curriculum in Mathematics (Middle School)

FRESHMAN YEAR

First Quarter	Second Quarter	Third Quarter
Core English (p. 16) 5	Core Philosophy (p. 16) 5	Core History (p. 16) 3
Core History (p. 16) 3	Core History (p. 16) 3	MH 163 An. Geom. & Calc. III 5
MH 161 An. Geom. & Calc. I 5	MH 162 An. Geom. & Calc. II 5	Core Science (p. 16) 5
Core Social Science (p. 16) 3	Core Social Science (p. 16) 3	Core Social Science (p. 16) 3
CTS 102 Orientation 1	ROTC or HHP 195 1-2	ROTC or Elective 0-1

SOPHOMORE YEAR

EH 220 Great Books I 5	EH 221 Great Books II 5	RSE 310 Surv. Exc. 5
MH 264 Calculus IV 5	MH 265/269 Dif. Equations 3	Core Fine Arts (p.16) 3
FED 300 Ed. Psych. 5	Core Science (p. 16) 5	MH 266/337 Lin. Alg. 3
CTS 204 Comp. Prog. 3	Elective 3	EM 200 Ed. Media 2
ROTC or Elective 0-1	ROTC or Elective 1	Elective 3
		ROTC or Elective 1

JUNIOR YEAR

MH 538 Geometry 5	MH Group Requisite II *** 5	DMS 560 Statistics 5
DMS 371 Discrete Math I 3	MH 331/333 Alg./Grp. Theory 3	FED 400 Meas. Eval. * 5
FED 350 Cult. Fnd. * 5	CTS 404 Tch. Math * 3	MH 301 History Math 2
Elective 4	CTD 419 Middle School * 5	CTD 401 Tch. Math * 4
	CCP 322 Hum. Rel. * 2	

SENIOR YEAR

Core Composition 5	CTS 403 Tch. Math * 3	CTS 425 Intern * 15
MH Group Requisite I ** 5	MH Group Requisite III *** 5	
CTS 402 Tchg. Math. I * 3	MH Elective 4	
EDL 401 Org. Adm. * 2	CTR 370/571 Reading 5	

TOTAL HOURS — 204

* Prerequisite Admission to Teacher Education.

** Group Requisite I — DMS 512, 573, 575

*** Group Requisite II — MH 539, 543, 544, 586

**** Group Requisite III — DMS 500, 517, 518, 520, 530, 577, MH 334, 500, 508, 520, 537, 563, 564, 584

Curriculum in Biology - Chemistry

FRESHMAN YEAR

First Quarter	Second Quarter	Third Quarter
Core English (p. 16) 5	Core Fine Arts (p. 16) 3	Core Math (MH 162 req.) 5
Core Social Science (p. 16) 3	Core Social Science (p. 16) 3	Core Social Science (p. 16) 3
CH 103 Fund. Chem. I 4	CH 104 Fund. Chem. II 4	CH 105 Fund. Chem. III 4
CH 103LGen. Chem. Lab 1	CH 104LGen. Chem. Lab 1	CH 105LGen. Chem. Lab 1
BI 101 Prin. of Biology 5	BI 102 Plant Biol. 5	BI 103 Animal Biol. 5
ROTC or PE 1-2	CTS 102 Orientation 1	ROTC or Elective 0-1
	ROTC or HHP 195 1-2	

SOPHOMORE YEAR

CH Organic 5	CH Organic 5	Core Philosophy (p. 16) 5
ZY/BY Physiology 300-500 5	ZY 300 Genetics 5	FED 300 Ed. Psych. 5
Core History (p. 16) 3	Core History (p. 16) 3	Core History (p. 16) 3
EM 200 Ed. Media 2	EH 220 Great Books I 5	EH 221 Great Books II 5
ROTC or Elective 0-1	ROTC or Elective 1	ROTC or Elective 1

JUNIOR YEAR

CH 518 Biochem. 5	Core English (p. 16) 5	CH 300-500 5
ZY 306 Ecology 5	BY/ZY/ENT/MB 300-500 5	BY/ZY/ENT/MB 300-500 5
RSE 310 Surv. Exc. 5	CTS 420 Sec. School 5	PS 205 Physics/Lab 5
	FED 350 Cult. Fnd. * 5	

SENIOR YEAR

PS 206 Physics II/Lab 5	PS 207 Physics III/Lab 4	CTS 425 Internship * 15
CTS 405 Tchg. Sci. * 3	CTS 410 Prog. Sci. * 3	
CCP 322 Hum. Rel. * 2	CTS 415 Curr. Trends * 3	
FED 400 Meas. * 5	EDL 401 Org. Adm. Pub. Ed. * 2	
CH 316 Physical Chemistry 5	CTR 571 Rdg. Content Area * 5	

TOTAL HOURS — 212

* Prerequisite Admission to Teacher Education.

Curriculum in Biology - English

FRESHMAN YEAR

First Quarter	Second Quarter	Third Quarter
Core English (p. 16) 5	CH 103 Chemistry 4	CH 104 Chemistry 4
Core History (p. 16) 3	CH 103LGen. Chem. Lab 1	CH 104LGen. Chem. Lab 1
Core Math (p. 16) 5	Core History (p. 16) 3	Core History (p. 16) 3
CTS 102 Orientation 1	BI 101 Prin. of Biol. 5	BI 102 Plant Biol. 5
ROTC or PE 1-2	Core Fine Arts (TH 200/201) 3	Core Philosophy (p. 16) 5
	ROTC or HHP 195 1-2	ROTC or Elective 0-1

College of Education

SOPHOMORE YEAR

EH 220 Great Books I	5	EH 221 Great Books II	5	CH Organic	5
BI 103 Animal Biol.	5	ZY 300 Genetics	5	RSE 310 Surv. Exc.	5
Core Social Science (p. 16)	3	FED 300 Ed. Psych.	5	CTS 420 Secondary School	5
COM 100 Prof. Comm.	3	Core Social Science (p. 16)	3	Core Social Science (p. 16)	3
ROTC or Elective	0-1	ROTC or Elective	1	ROTC or Elective	1

JUNIOR YEAR

Core English (p. 16) (EH 400 req.) ...	5	EH 403 Interpreting Texts	5	BY/ZY/ENT/MB 300-500	5
ZY/BY Physiology 300-500	5	ZY 306 Ecology	5	CTR 571 Reading *	5
CTS 501 Lang. Study	5	EM 200 Ed. Media	2	CCP 322 Hum. Rel. *	2
CTS 502 Rhet. Comp.	5	EDL 401 Org. Adm. *	2		

SENIOR YEAR

FED 350 Cult. Fnd. *	5	EH 300-500	5	CTS 425 Internship *	15
EH 470/471 Shakespeare	5	CTS 411/412/413 Teaching *	6		
CTR 576 Rdg. Adol.	5	FED 400 Meas. Eval. *	5		
CTS 405 Tchg. Sci. *	3	CTS 410 Prog. in Sci. *	3		

TOTAL HOURS — 209

* Prerequisite Admission to Teacher Education.

Curriculum in Biology - Foreign Language (Options: German, French, Spanish)

FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
Core English (p. 16)	5	CH 103 Chemistry	4	CH 104 Chemistry	4
Core History (p. 16)	3	CH 103L Chemistry Lab	1	CH 104L Chemistry Lab	1
Core Math (p. 16)	5	Core History (p. 16)	3	Core History (p. 16)	3
FR/GR/SP 201 Int. I	4-5	BI 101 Prin. of Biology	5	BI 102 Plant Biol.	5
CTS 102 Orientation	1	FR/GR/SP 202 Int. II	4-5	FR/GR/SP 203 Int. III	4-5
ROTC or PE	1-2	ROTC or HHP 195	1-2	ROTC or Elective	0-1

SOPHOMORE YEAR

EH 220 Great Books I	5	EH 221 Great Books II	5	CH Organic	5
Core Social Science (p. 16)	3	Core Social Science (p. 16)	3	Core Social Science (p. 16)	3
Core Fine Arts (p. 16)	3	ZY 300 Genetics	5	RSE 310 Surv. Exc.	5
BI 103 Animal Biology	5	FR/GR/SP 302/SP 303 Con/Com	3	Core Philosophy (p. 16)	5
FR/GR/SP 301/SP 302 Con/Syn	3	FED 300 Ed. Psych.	5	GR 303/FR/SP 304 Con/Pho. Com. ..	3
ROTC or Elective	0-1	ROTC or Elective	1	ROTC or Elective	1

JUNIOR YEAR

Core English (p. 16)	5	ZY 306 Ecology	5	BY/ZY/ENT/MB 300-500	5
BY/ZY/ENT/MB 300-500	5	FR 311 or 312/GR 312/SP 305	3	FR/GR/SP 300-500	3
BY/ZY Physiology 300-500	5	EM 200 Ed. Media	2	CTR 571 Reading *	5
FR 303/GR 311/SP 312, 313, 314 or SP 315 Civ.	3	EDL 401 Org. Adm. *	2	CCP 322 Hum. Rel. *	2
		CTS 420 Sec. School	5		

SENIOR YEAR

FR/GR/SP 300-500	3	FR/GR/SP 300-500	6	CTS 425 Internship *	15
GR 313 Literature	3/0	FED 400 Meas. Eval. *	5		
FED 350 Cult. Fnd. *	5	CTS 410 Prog. FL *	3		
CTS 405 Tchg. FL *	3	CTS 410 Prog. Science *	3		
CTS 405 Tchg. Science *	3				

CURRENT MODEL HOURS — 218 ** / ADVANCED PLACEMENT HOURS — 15 ** / TOTAL HOURS — 233 **

* Prerequisite Admission to Teacher Education.

** Model assumes advanced placement credit for first-year courses in the language.

Curriculum in Biology - Social Science (Options: Geography, History, Political Science)

FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
Core English (p. 16)	5	Core Philosophy (p. 16)	5	Core Fine Arts (p. 16)	3
Core History (p. 16)	3	Core History (p. 16)	3	Core History (p. 16)	3
Core Math (p. 16)	5	CH 104 Fund. Chem. II	4	Social Science Option	5
CH 103 Fund. Chem. I	4	CH 104L Gen. Chem. Lab	1	BI 101 Biology	5
CH 103L Gen. Chem. Lab	1	CTS 102 Orientation	1	ROTC or Elective	0-1
ROTC or PE	1-2	ROTC or HHP 195	1-2		

SOPHOMORE YEAR

EH 220 Great Books I	5	EH 221 Great Books II	5	RSE 310 Surv. Exc.	5
BI 102 Plant Biol.	5	BI 103 Animal Biol.	5	Social Science Option	5
Core Social Science	3	Core Social Science	3	FED 300 Ed. Psych.	5
Social Science Option	5	EM 200 Ed. Media	2	Core Social Science	3
ROTC or Elective	0-1	Social Science Option	5	ROTC or Elective	0-1
		ROTC or Elective	0-1		

JUNIOR YEAR

Core English (p. 16)	5	BY/ZY Physiology 300-500	5	ZY 306 Ecology	5
CH Organic	5	CCP 322 Hum. Rel. *	2	FED 400 Eval. Meas. *	5
FED 350 Cult. Fnd. *	5	EDL 401 Org. Adm. Ed. *	2	Social Science Option	5
Social Science Option	5	CTS 421 Soc. Sci.	5		
		CTR 571 Reading *	5		

College of Education

SENIOR YEAR

Social Science Option	5	Social Science Option	5	CTS 425 Internship *	15
ZY 300 Genetics	5	BY/ZY/ENT/MB 300-500	10		
CTS 405 Tch. SS *	3	CTS 410 Prog. SS *	3		
CTS 405 Tch. Sci. *	3	CTS 410 Prog. Sci. *	3		
CTS 420 Secondary School	5		5		

TOTAL HOURS — 221

* Prerequisite Admission to Teacher Education.

Curriculum in Chemistry - Social Science (Options: Geography, History, Political Science)

FRESHMAN YEAR

First Quarter

Core English (p. 16)	5
Core History (p. 16)	3
Core Math (p. 16) (MH 162 req.)	5
CH 103 Fund. Chem. I	4
CH 103LGen. Chem. Lab	1
ROTC or PE	1-2

Second Quarter

Core Fine Arts (p. 16)	3
Core Philosophy (p. 16)	5
Core History (p. 16)	3
CH 104 Fund. Chem. II	4
CH 104LGen. Chem. Lab	1
CTS 102 Orientation	1
ROTC or HHP 195	1-2

Third Quarter

Core History (p. 16)	3
Social Science Options	10
CH 105 Fund. Chem. III	4
CH 105LGen. Chem. Lab	1
ROTC or Elective	0-1

SOPHOMORE YEAR

EH 220 Great Books I	5
PS 205 Physics I/Lab	5
Core Social Science (p. 16)	3
Social Science Option	5
ROTC or Elective	0-1

EH 221 Great Books II	5
PS 206 Physics I/Lab	5
Core Social Science (p. 16)	3
EM 200 Educ. Media	2
Social Science Option	5
ROTC or Elective	0-1

RSE 310 Surv. Exc.	5
Social Science Option	5
FED 300 Ed. Psych.	5
Core Social Science (p. 16)	3
ROTC or Elective	1

JUNIOR YEAR

Core English (p. 16)	5
CH 207 Organic I	5
FED 350 Cult. Fnd *	5
ROTC or Elective	1

CH 208 Organic II	5
CCP 322 Hum. Rel. Trm. Ed. *	2
EDL 401 Org. Adm. *	2
CTS 421 Soc. Sci.	5
CTR 571 Reading *	5

CH 518 Biochemistry	5
FED 400 Eval. Meas. *	5
Social Science Option	5

SENIOR YEAR

Social Science Option	5
CH 318 Physical	5
CTS 405 Tch. SS *	3
CTS 405 Tch. Sci. *	3
CTS 420 Sec. School	5

Social Science Option	5
CH 300-500	5
CTS 410 Prog. SS *	3
CTS 410 Prog. Sci. *	3

CTS 425 Intern *	15
------------------	----

TOTAL HOURS — 216

* Prerequisite Admission to Teacher Education.

Curriculum in Chemistry-Foreign Language (Options: French, German, Spanish)

FRESHMAN YEAR

First Quarter

Core English (p. 16)	5
Core Social Science (p. 16)	3
Core Fine Arts (p. 16)	3
FR/GR/SP 201 Int. I	4-5
CTS 102 Orientation	1
ROTC or PE	1-2

Second Quarter

Core Philosophy (p. 16)	5
Core Social Science (p. 16)	3
FR/GR/SP 202 Int. II	4-5
CH 103 Fund. Chem. I	4
CH 103LGen. Chem. Lab	1
ROTC or HHP 195	1-2

Third Quarter

Core Social Science (p. 16)	3
Core Math (p. 16)	5
CH 104 Fund. Chem. II	4
CH 104LGen. Chem. Lab	1
FR/GR/SP 203 Int. III	4-5
ROTC or Elective	0-1

SOPHOMORE YEAR

CH 105 Fund. Chem.	4
CH 105LGen. Chem. Lab	1
Core History (p. 16)	3
FR/GR/SP 302 Con/Syn.	3
EH 220 Great Books I	5
ROTC or Elective	0-1

EH 221 Great Books II	5
CH 207 Organic	5
Core History (p. 16)	3
FR/GR/SP 303 Com/Con	3
ROTC or Elective	1

Core History (p. 16)	3
CH 208 Organic II	5
FED 300 Ed. Psych.	5
FR/GR/SP 304 Com/Pho. Con.	3
ROTC or Elective	1

JUNIOR YEAR

FR 303/GR 311/SP 312, 313	
314 or 315 Ch.	3
Core English (p. 16)	5
RSE 310 Surv. Exc.	5
PS 205 Physics I/Lab	5

FR 311 or 312/GR 312/SP 305	3
EDL 401 Org. Adm. *	2
FED 350 Cult. Fnd. *	5
EM 200 Ed. Media	2
PS 206 Physics II/Lab	5
CCP 322 Hum. Rel. *	2

FR/GR/SP 300-500	3
FED 400 Meas. *	5
CH 316 Physical	5
CTR 571 Reading *	5

SENIOR YEAR

FR/GR/SP 300-500	3
GR 313 Literature	3/0
CH 518 Biochem. Lab	5
CTS 410 Prog. FL *	3
CTS 410 Prog. Sci. *	3
CTS 420 Sec. School	5

FR/GR/SP 300-500	6
CH 300-500	5
CTS 405 Tch. FL *	3
CTS 405 Tch. Sci. *	3

CTS 425 Internship *	15
----------------------	----

CURRENT MODEL HOURS — 213 ** / ADVANCED PLACEMENT HOURS — 15 ** / TOTAL HOURS — 228 **

* Prerequisite Admission to Teacher Education.

** Model assumes advanced placement credit for first-year courses in the language.

Curriculum in English - Chemistry

FRESHMAN YEAR		
First Quarter	Second Quarter	Third Quarter
Core English (p. 16) 5	Core Fine Arts (p. 16)(TH 200/201) .. 3	Core History (p. 16) 3
Core History (p. 16) 3	Core History (p. 16) 3	CH 105 Fund. Chem. III 4
Core Math (p. 16) (MH 162 req.) 5	CH 104 Fund. Chem. II 4	CH 105L Gen. Chem. Lab 1
CH 103 Fund. Chem. I 4	CH 104L Gen. Chem. Lab 1	EM 200 Ed. Media 2
CH 103L Gen. Chem. Lab 1	Core Philosophy (p. 16) 5	COM 100 Prof. comm. 3
CTS 102 Orientation 1	ROTC or HHP 195 1-2	ROTC or Elective 0-1
ROTC or PE 1-2		
SOPHOMORE YEAR		
CH 207 Organic I 5	CH 208 Organic II 5	PS 206 Physics II/Lab 5
Core Social Science (p. 16) 3	PS 205 Physics I/Lab 5	FED 300 Ed. Psych. 5
EH 220 Great Books I 5	Core Social Science (p. 16) 3	Core Social Science (p. 16) 3
ROTC or Elective 0-1	EH 221 Great Books II 5	ROTC or Elective 1
	ROTC or Elective 1	
JUNIOR YEAR		
CH 518 Biochem./Lab 5	EH 403 Interpreting Texts 5	CH 300-500 5
Core English (p. 16)(EH 400 req.) 5	CH 316 Physical 5	EH 470/471 Shakespeare 5
CTS 501 Lang. Study 5	RSE 310 Surv. Exc. 5	FED 400 Meas. Eval.* 5
CTS 502 Rhet. Comp. 5	CTR 571 Reading* 5	CCP 322 Hum. Rel.* 2
SENIOR YEAR		
CTS 420 Sec. School 5	EH 300-500 5	CTS 425 Internship * 15
CTS 410 Prog. Sci. * 3	CTS 411/412/413 Tchg English * .. 6	
FED 350 Cult. Fnd. * 5	EDL 401 Org. Adm. * 2	
CTR 576 Rdg. Adol. 5	CTS 405 Tchg. Sci. * 3	

TOTAL HOURS — 204

* Prerequisite Admission to Teacher Education.

Curriculum in English - Foreign Language (Options: French, German, Spanish)

FRESHMAN YEAR		
First Quarter	Second Quarter	Third Quarter
Core English (p. 16) 5	Core Science (p. 16) 5	Core Fine Arts (TH 200/201) 3
Core History (p. 16) 3	Core History (p. 16) 3	Core History (p. 16) 3
Core Science (p. 16) 5	Core Math (p. 16) 5	Core Social Science (p. 16) 3
FR/GR/SP 201 Int. I 4-5	FR/GR/SP 202 Int. II 4-5	FR/GR/SP 203 Int. III 4-5
CTS 102 Orientation 1	ROTC or HHP 195 1-2	ROTC or Elective 0-1
ROTC or PE 1-2		
SOPHOMORE YEAR		
EH 220 Great Books I 5	EH 221 Great Books II 5	EH 403 Interpreting Texts 5
Core Social Science (p. 16) 3	Core Social Science (p. 16) 3	GR 303/FR, SP 304 3
Core Philosophy (p. 16) 5	EM 200 Ed. Media 2	FED 300 Ed. Psych. 5
FR, GR 301/SP 302 3	COM 100 Prof. Comm. 3	RSE 310 Surv. Exc. 5
ROTC or Elective 0-1	FR, GR 302/SP 303 Com/Con. 3	ROTC or Elective 1
	ROTC or Elective 1	
JUNIOR YEAR		
Core English (p. 16)(EH 400 req.) 5	EH 470/471 Shakespeare 5	EH 300-500 5
CTS 501 Lang. Study 5	CTR 571 Reading * 5	FED 350 Cult. Fnd. * 5
CTS 502 Rhet. Comp. 5	CCP 322 Hum. Rel. * 2	FR/GR/SP 300-500 Com/Pho, Com. 6
FR 303/GR 311/SP 312, 313 3	EDL 401 Org. Adm. * 2	
314 or 315 Civ. 3	FR 311 or 312/GR 312/SP 305 3	
SENIOR YEAR		
CTS 405 Tchg. FL * 3	FR/GR/SP 300-500 6	CTS 425 Intern * 15
CTR 576 Rdg. Adol. 5	CTS 411/412/413 Tch. EH * 6	
GR 313 Literature 0/3	CTS 410 Prog. FL * 3	
CTS 420 Sec. School 5	FED 400 Meas. * 5	

CURRENT MODEL HOURS — 206 ** / ADVANCED PLACEMENT HOURS — 215 ** / TOTAL HOURS — 221 **

* Prerequisite Admission to Teacher Education.

** Model assumes advanced placement credit for first-year courses in the language.

Curriculum in English - Social Science (Options: Geography, History, Political Science)

FRESHMAN YEAR		
First Quarter	Second Quarter	Third Quarter
Core English (p. 16) 5	Core Philosophy (p. 16) 5	Core Fine Arts (TH 200/201) 3
Core History (p. 16) 3	Core History (p. 16) 3	Core History (p. 16) 3
Core Science (p. 16) 5	Core Science (p. 16) 5	Core Social Science (p. 16) 3
CTS 102 Orientation 1	Core Math (p. 16) 5	ROTC or Elective 0-1
ROTC or PE 1-2	ROTC or HHP 195 1-2	

SOPHOMORE YEAR

EH 220 Great Books I	5	EH 221 Great Books II	5	EH 403 Interpreting Texts	5
Core Social Science (p. 16)	3	Core Social Science (p. 16)	3	Social Science Option	5
Social Science Option	5	Social Science Option	5	FED 300 Ed. Psych.	5
ROTC or Elective	0-1	EM 200 Ed. Media	2	RSE 310 Surv. Exc.	5
		COM 100 Prof. Comm.	3	ROTC or Elective	1
		ROTC or Elective	1		

JUNIOR YEAR

Core English (EH 400 req.)	5	EH 470/471 Shakespeare	5	EH 300-500	5
CTS 420 Sec. School	5	Social Science Option	5	Social Science Options	10
CTS 501 Lang. Study	5	CTR 571 Reading *	5	FED 350 Cult. Fnd. *	5
CTS 502 Rhet. Comp.	5	CCP 322 Hum. Rel. *	2		
		EDL 410 Org. Adm. *	2		

SENIOR YEAR

Social Science Option	5	Social Science Option	5	CTS 425 Intern *	15
CTS 421 Soc. Sci.	5	CTS 411/412/413 *	6		
CTS 405 Tchg SS *	3	CTS 410 Prog. SS *	3		
CTR 576 Rdg. Adol. *	5	FED 400 Meas. Eval. *	5		

TOTAL HOURS — 209

* Prerequisite Admission to Teacher Education.

Curriculum for Dual Foreign Language (Options: French, German, Spanish)

FRESHMAN YEAR

First Quarter

Core English (p. 16)	5
Core Social Science (p. 16)	3
FR/GR/SP 201 Int. I	4-5
FR/GR/SP 201 Int. I	4-5
CTS 102 Orientation	1
ROTC or PE	1-2

Second Quarter

Core Social Science (p. 16)	3
FR/GR/SP 202 Int. II	4-5
FR/GR/SP 202 Int. II	4-5
Core Science (p. 16)	5
ROTC or HHP 195	1-2

Third Quarter

Core Social Science (p. 16)	3
Core Science (p. 16)	5
FR/GR/SP 203 Int. III	4-5
FR/GR/SP 203 Int. III	4-5
ROTC or Elective	0-1

SOPHOMORE YEAR

Core Philosophy (p. 16)	5	Core Math (p. 16)	5	EH 221 Great Books II	5
Core History (p. 16)	3	EH 220 Great Books I	5	FED 300 Ed. Psych.	5
FR, GR 301/SP 302 Com./Syn.	3	Core History (p. 16)	3	GR 303/FR, SP 304 Com/Pho, Cm.	3
FR, GR 301/SP 302 Com./Syn.	3	FR, GR 302/SP 303 Com./Con.	3	GR 303/FR, SP 304 Com/Pho, Cm.	3
ROTC or Elective	1	FR, GR 302/SP 303 Com./Con.	3	ROTC or Elective	1
		ROTC or Elective	1		

JUNIOR YEAR

FR 303/GR 311/SP 312, 313	3	FR 311 or 312/GR 312/SP 304	3	FR/GR/SP 300-500	3
314 or 315 Civ.	3	FR 311 or 312/GR 312/SP 304	3	FR/GR/SP 300-500	3
FR 303/GR 311/SP 312, 313	3	FED 350 Cult. Fnd. *	5	CTS 405 Tchg. FL *	3
314 or 315 Civ.	3	EM 200 Ed. Media	2	CTS 410 Prog. FL *	3
Core English (p. 16)	5	CCP 322 Hum. Rel. *	2	FED 400 Meas. Eval. *	5
Core History (p. 16)	3				
RSE 310 Surv. Exc.	5				

SENIOR YEAR

FR/GR/SP 300-500	6	GR 313 Literature	0/3	CTS 425 Intern *	15
FR/GR/SP 300-500	6	FR/GR/SP 300-500	3		
Core Fine Arts (p. 16)	3	FR/GR/SP 300-500	3		
CTS 420 Sec. School	5	CTR 571 Reading *	5		
		EDL 401 Org. Adm. *	2		

CURRENT MODEL HOURS — 209 ** / ADVANCED PLACEMENT HOURS — 30 ** / TOTAL HOURS — 239 **

* Prerequisite Admission to Teacher Education.

** Model assumes advanced placement credit for first-year courses in the language.

Curriculum in Foreign Language (Options: French, German, Spanish) *

Social Science (Options: Geography, History, Political Science)

FRESHMAN YEAR

First Quarter

Core English (p. 16)	5
Core History (p. 16)	3
Core Science (p. 16)	5
FR/GR/SP 201 Int. I	5-4-5
CTS 102 Orientation	1
ROTC or PE	1-2

Second Quarter

Core Science (p. 16)	5
Core History (p. 16)	3
Core Math (p. 16)	5
FR/GR/SP 202 Int. II	5-4-5
ROTC or HHP 195	1-2

Third Quarter

Core Fine Arts (p. 16)	3
Core History (p. 16)	3
Core Social Science (p. 16)	3
FR/GR/SP 203 Int. III	5-4-5
ROTC or Elective	0-1

SOPHOMORE YEAR

EH 220 Great Books I	5	EH 221 Great Books II	5	Social Science Option	5
Core Social Science (p. 16)	3	Core Social Science (p. 16)	3	GR 303/FR, SP 304 Com/Pho, Com.	3
Core Philosophy (p. 16)	5	EM 200 Ed. Media	2	FED 300 Ed. Psych.	5
FR, GR 301/SP 302 Con./Syn.	3	Social Science Option	5	RSE 310 Surv. Exc.	5
Social Science Option	5	FR, GR 302/SP 303 Com./Con.	3	ROTC or Elective	1
ROTC or Elective	0-1	ROTC or Elective	1		

College of Education

JUNIOR YEAR

Core English (p. 16)	5
Social Science Option	5
FR 303/GR 311/SP 312, 313,	
314 or 315 Civ.	3
CTS 420 Sec. School	5

Social Science Option	5
CTR 571 Reading*	5
CCP 322 Hum. Rel.*	2
CTS 421 SS Conc.	5
FR 311/GR 312/SP 305 Lit/Civ.	3

Social Science Options	10
FED 350 Cult. Fnd.*	5
FR/GR/SP 300-500	6

SENIOR YEAR

CTS 405 Tchg. Soc. Sci.*	3
CTS 405 Tchg. FL*	3
FR/GR/SP 300-500	6
GR 313 Literature	3
EDL 401 Org. Adm.*	2

Social Science Option	5
CTS 410 Prog. Soc. Sci.*	3
CTS 410 Prog. FL*	3
FED 400 Meas.*	5

CTS 425 Intern*	15
-----------------	----

CURRENT MODEL HOURS - 218 ** / ADVANCED PLACEMENT HOURS - 15 ** / TOTAL HOURS - 233 **

* Prerequisite Admission to Teacher Education.

** Model assumes advanced placement credit for first-year courses in the language.

Curriculum in Mathematics - Biology

First Quarter

Core English (p. 16)	5
Core History (p. 16)	3
Core Math (p. 16) (MH 161 req.)	5
BI 101 Principles	5
CTS 102 Orientation	1
ROTC or PE	1-2

FRESHMAN YEAR

Second Quarter

Core Philosophy (p. 16)	5
Core History (p. 16)	3
MH 162 An. Geom. & Calc. II	5
BI 102 Plant Biol.	5
ROTC or HHP 195	2
Elective	1-2

Third Quarter

Core Fine Arts (p. 16)	3
CTS 204 Comp. Prog.	3
Core History (p. 16)	3
MH 163 An. Geom. & Cal. III	5
BI 103 Animal Biol.	5
ROTC or Elective	0-1

SOPHOMORE YEAR

EH 220 Great Books I	5
CH 103 Fund. Chem. I	4
CH 103LGen. Chem. Lab	1
Core Social Science (p. 16)	3
MH 264 An. Geom. & Calc. IV	5
ROTC or Elective	0-1

EH 221 Great Books II	5
CH 104 Fund. Chem. II	4
CH 104LGen. Chem. Lab	1
Core Social Science (p. 16)	3
EM 200 Ed. Media	2
MH 265/269 Dif. Equat.	3
ROTC or Elective	1

RSE 310 Surv. Exc.	5
CH 203/207 Organic	5
MH 266/337 Lin. Algebra	3
MH 301 History of Math	3
Core Social Science (p. 16)	3
ROTC or Elective	1

JUNIOR YEAR

Core English (p. 16)	5
DMS 371 Discrete Math I	3
FED 300 Ed. Psych.	5
BY/ZY 300-500 Physiology	5

ZY 300 Genetics	5
CCP 322 Hum. Rel.*	2
CTS 420 Secondary School	5
MH 331/333 Group Theory	3
CTR 571 Reading*	5

ZY 306 Ecology	5
FED 400 Meas. Eval.*	5
FED 350 Cult. Fnd.*	5

SENIOR YEAR

MH 538 Geometry	5
BY/ZY/ENT/MB 300-500	5
CTD 401 Tch. Math*	4
CTS 405 Tchg. Sci.*	3
EDL 401 Org. Adm.*	2

DMS 560 Statistics	5
BY/ZY/ENT/MB 300-500	5
CTS 402 Tch. Math I*	3
CTS 410 Prg. Science*	3
CTS 404 Appl. Tech.	3

CTS 425 Intern*	15
-----------------	----

TOTAL HOURS - 223

* Prerequisite Admission to Teacher Education.

Curriculum in Mathematics - Chemistry

First Quarter

Core English (p. 16)	5
Core History (p. 16)	3
MH 161 An. Geom. & Calc. I	5
CH 103 Fund. Chem. I	4
CH 103LGen. Chem. Lab	1
CTS 102 Orientation	1
ROTC or PE	1-2

FRESHMAN YEAR

Second Quarter

Core Philosophy (p. 16)	5
Core History (p. 16)	3
MH 162 An. Geom. & Calc. II	5
CH 104 Fund. Chem. II	4
CH 104LGen. Chem. Lab	1
ROTC or HHP 195	1-2

Third Quarter

Core Fine Arts (p. 16)	3
CTS 204 Comp. Prog.	3
Core History (p. 16)	3
MH 163 An. Geom. & Cal. III	5
CH 105 Fund. Chem. III	4
CH 105LGen. Chem. Lab	1
ROTC or Elective	0-1

SOPHOMORE YEAR

EH 220 Great Books I	5
PS 205 Physics I/Lab	5
Core Social Science	3
MH 264 Calculus IV	5
ROTC or Elective	0-1

EH 221 Great Books II	5
PS 206 Physics II/Lab	5
Core Social Science	3
EM 200 Ed. Media	2
MH 265/269 Dif. Equat.	3
ROTC or Elective	1

RSE 310 Surv. Exc.	5
MH 266/337 Lin. Algebra	3
FED 300 Ed. Psych.	5
Core Social Science	3
ROTC or Elective	1

JUNIOR YEAR

Core English (p. 16)	5
DMS 371 Discrete Math. I	3
CH 207 Organic	5
FED 350 Cult. Fnd.*	5

CH 208 Organic	5
CTS 420 Sec. School	5
MH 331/333 Group Theory	3
CTR 571 Reading*	5

CH 518 Biochem/Lab	5
FED 400 Meas. Eval.*	5
MH 301 Hist. Math	3
CCP 322 Hum. Rel.*	2

College of Education

SENIOR YEAR

MH 538 Geometry	5	DMS 560 Statistics	5	CTS 425 Internship *	15
CH 316 Physical	5	CH 300-500	5		
CTD 401 Tch. Math *	4	CTS 402 Tch. Math I *	3		
CTS 405 Tch. Sci. *	3	CTS 410 Prg. Sci. *	3		
EDL 401 Org. Adm.	2	CTS 404 Appl. Tech.	3		

TOTAL HOURS — 218

* Prerequisite Admission to Teacher Education.

Curriculum in Mathematics - English

FRESHMAN YEAR

First Quarter

Core English (p. 16)	5
Core History (p. 16)	3
MH 161 An. Geom. & Calc. I	5
CTS 102 Orientation	1
ROTC or PE	1-2

Second Quarter

Core Science (p. 16)	5
Core History (p. 16)	3
MH 162 An. Geom. & Calc. II	5
Core Fine Arts (TH 200/201)	3
ROTC or HHP 195	1-2

Third Quarter

Core Philosophy (p. 16)	5
Core History (p. 16)	3
MH 163 An. Geom. & Calc. III	5
Core Science (p. 16)	5
ROTC or Elective	0-1

SOPHOMORE YEAR

EH 220 Great Books I	5
Core Social Science (p. 16)	3
MH 264 Calculus IV	5
COM 100 Prof. Comm.	3
ROTC or Elective	0-1

EH 221 Great Books II	5
FED 300 Ed. Psych.	5
Core Social Science (p. 16)	3
MH 265/269 Dif. Equat.	3
ROTC or Elective	1

RSE 310 Surv. Exc.	5
MH 266/337 Lin. Algebra	3
CTS 204 Comp. Prog.	3
Core Social Science (p. 16)	3
ROTC or Elective	1

JUNIOR YEAR

Core English (p. 16)(EH 400 req.)	5
MH 331/333 Alg. Grp. Theory	3
CTS 501 Lang. Study	5
CTS 502 Rhet. Comp.	5
EM 200 Ed. Media	2

EH 403 Interpreting Texts	5
DMS 560 Statistics	5
FED 350 Cult. Fnd. *	5
CTS 420 Sec. School	5

EDL 401 Org. Adm. *	2
CTR 571 Reading*	5
MH 301 Hist. Math	3
CCP 322 Hum. Rel. *	2
CTD 401 Tch. Math *	4
CTS 404 Appl. Tech. *	3

SENIOR YEAR

MH 538 Geometry	5
EH 470/471 Shakespeare	5
CTR 576 Rdg. Adol.	5
CTS 402 Tch. Math *	3

EH 300-500	5
CTS 411/412/413 Tch. EH *	6
FED 400 Meas. Eval. *	5
DMS 371 Discrete Math I	3

CTS 425 Intern *	15
------------------	----

TOTAL HOURS — 211

* Prerequisite Admission to Teacher Education.

Curriculum in Mathematics - Social Science (Options: Geography, History, Political Science)

FRESHMAN YEAR

First Quarter

Core English (p. 16)	5
Core History (p. 16)	3
MH 161 An. Geom. & Calc. I	5
Core Science (p. 16)	5
CTS 102 Orientation	1
ROTC or Elective	1-2

Second Quarter

Core Philosophy (p. 16)	5
Core History (p. 16)	3
MH 162 An. Geom. & Calc. II	5
Core Science (p. 16)	5
ROTC or HHP 195	1-2

Third Quarter

CTS 204 Comp. Prog.	3
Core History (p. 16)	3
Core Fine Arts (p. 16)	3
MH 163 An. Geom. & Calc. III	5
Social Science Option	5
ROTC or Elective	0-1

SOPHOMORE YEAR

EH 220 Great Books I	5
Core Social Science (p. 16)	3
Social Science Option	5
MH 264 Calculus IV	5
ROTC or Elective	0-1

EH 221 Great Books II	5
Social Science Option	5
Core Social Science (p. 16)	3
EM 200 Ed. Media	2
MH 265/269 Dif. Equat.	3
ROTC or Elective	1

RSE 310 Surv. Exc.	5
MH 266/337 Lin. Algebra	3
FED 300 Ed. Psych.	5
Core Social Science (p. 16)	3
ROTC or Elective	1

JUNIOR YEAR

Core English (p. 16)	5
DMS 371 Discrete Math I	3
Social Science Option	5
FED 350 Cult. Fnd. *	5

CTS 421 Soc. Sci.	5
CCP 322 Hum. Rel. *	2
CTS 420 Sec. School	5
MH 331/333 Alg. Grp. Theory	3
CTR 571 Reading *	5

Social Science Options	10
FED 400 Meas. Eval. *	5
MH 301 Hist. Math	3

SENIOR YEAR

MH 538 Geometry	5
Social Science Option	5
CTD 401 Tch. Math *	4
CTS 405 Tch. SS *	3
EDL 401 Org. Adm. *	2

DMS 560 Statistics	5
Social Science Option	5
CTS 402 Tch. Math I *	3
CTS 410 Prog. SS *	3
CTS 404 Appl. Tech. *	3

CTS 425 Intern *	15
------------------	----

TOTAL HOURS — 223

* Prerequisite Admission to Teacher Education.

Curriculum in Mathematics - Physics

FRESHMAN YEAR			FRESHMAN YEAR			FRESHMAN YEAR		
First Quarter			Second Quarter			Third Quarter		
Core English (p. 16)	5		Core Philosophy (p. 16)	5		CTS 204 Comp. Prog.	3	
Core History (p. 16)	3		Core History (p. 16)	3		Core History (p. 16)	3	
MH 161 An. Geom. & Calc. I	5		MH 162 An. Geom. & Calc. II	5		MH 163 An. Geom. & Calc. III	5	
Core Fine Arts (p. 16)	3		CH 103 Fund. Chem. I	4		CH 104 Fun. Chem. II	4	
CTS 102 Orientation	1		CH 103L Gen. Chem. Lab	1		CH 104L Gen. Chem. Lab	1	
ROTC or PE	1-2		ROTC or HHP 195	1-2		ROTC or Elective	0-1	
SOPHOMORE YEAR								
EH 220 Great Books I	5		EH 221 Great Books II	5		PS 222 Physics III/Lab	4	
PS 220 Physics I/Lab	4		PS 221 Physics II/Lab	4		MH 266/337 Lin. Algebra	3	
Core Social Science (p. 16)	3		Core Social Science (p. 16)	3		FED 300 Ed. Psych.	5	
MH 264 Calculus IV	5		EM 200 Ed. Media	2		Core Social Science (p. 16)	3	
ROTC or Elective	0-1		MH 265/269 Dif. Equat.	3		ROTC or Elective	1	
JUNIOR YEAR								
Core English (p. 16)	5		CCP 322 Hum. Rel. *	2		PS 302 Electronics	4	
MH 501 Cal. Vect.	3		RSE 310 Surv. Exc.	5		FED 400 Meas. Eval. *	5	
PS or MTL 300-500	6		CTR 571 Reading *	5		MH 301 History of Math	3	
FED 350 Cult. Fnd. *	5		CTS 404 Appl. Tech. Math. I *	3		DMS 371 Discrete Math	3	
SENIOR YEAR								
MH 538 Geometry	5		DMS 560 Statistics	5		CTS 425 Internship *	15	
PS 303 Optics	4		PS 300-500	4				
CTD 401 Tch. Math *	4		CTS 402 Tch. Math I *	3				
CTS 405 Tch. Sci. *	3		CTS 410 Prog. Science *	3				
PS 300-500	5		PS 510 Elec. and Mag.	4				
TOTAL HOURS — 217								

* Prerequisite Admission to Teacher Education.

Curriculum in Mathematics - Foreign Language (Options: French, German, Spanish)

FRESHMAN YEAR			FRESHMAN YEAR			FRESHMAN YEAR		
First Quarter			Second Quarter			Third Quarter		
Core English (p. 16)	5		Core Science (p. 16)	5		Core Science (p. 16)	5	
Core History (p. 16)	3		Core History (p. 16)	3		Core History (p. 16)	3	
MH 161 An. Geom. & Calc. I	5		MH 162 An. Geom. & Calc. II	5		MH 163 An. Geom. & Calc. III	5	
FR/GR/SP 201 Int. I	4-5		FR/GR/SP 202 Int. II	4-5		FR/GR/SP 203 Int. III	4-5	
CTS 102 Orientation	1		ROTC or HP 195	1-2		ROTC or Elective	0-1	
ROTC or PE	1-2							
SOPHOMORE YEAR								
EH 220 Great Books I	5		EH 221 Great Books II	5		Core Social Science (p. 16)	3	
Core Social Science (p. 16)	3		FED 300 Ed. Psych.	5		MH 266/337 Lin. Algebra	3	
Core Fine Arts (p. 16)	3		Core Social Science (p. 16)	3		CTS 204 Comp. Prog.	3	
MH 264 Calculus IV	5		MH 265/269 Dif. Equat.	3		FR, GR 303/SP 304 Com/Pho, Com	3	
FR, GR 301/SP 302 Com/Syn.	3		FR, GR 302/SP 303 Com/Con.	3		RSE 310 Surv. Exc.	5	
ROTC or Elective	0-1		ROTC or Elective	1		ROTC or Elective	1	
JUNIOR YEAR								
Core English (p. 16)	5		DMS 560 Statistics	5		MH 301 Hist. Math	3	
Core Philosophy (p. 16)	5		FR 311 or 312/GR 312/SP 305	3		FR/GR/SP 300-500	3	
MH 331/333 Alg. Grp. Theory	3		FED 350 Cult. Fnd. *	5		EDL 401 Org. Adm. *	2	
FR 303/GR 311/SP 312, 313	3		CCP 322 Hum. Rel. *	2		CTR 571 Reading *	5	
314 or 315 Civ.	3		CTS 420 Secondary School	5		CTD 401 Tch. Math *	4	
EM 200 Ed. Media	2					CTD 404 Appl. Tech. *	3	
SENIOR YEAR								
MH 538 Geometry	5		DMS 371 Discrete Math. I	3		CTS 425 Internship *	15	
FR/GR/SP 300-500	3		FR/GR/SP 300-500	6				
GR 313 Literature	0/3		FED 400 Meas. and Eval. Ed. *	5				
CTD 402 Tch. Math *	3		CTS 410 Prog. FL *	3				
CTS 405 Tch. for Lang. *	3							

CURRENT MODEL HOURS — 220 ** / ADVANCED PLACEMENT HOURS — 15 ** / TOTAL HOURS — 235 **

* Prerequisite Admission to Teacher Education.

** Model assumes advanced placement credit for first-year courses in the language.

Curriculum for Dual Social Sciences (Options: Geography, History, Political Science)

FRESHMAN YEAR			FRESHMAN YEAR			FRESHMAN YEAR		
First Quarter			Second Quarter			Third Quarter		
Core English (p. 16)	5		Core Math (p. 16)	5		Core Philosophy (p. 16)	5	
Core History (p. 16)	3		Core History (p. 16)	3		Core History (p. 16)	3	
Core Science (p. 16)	5		Core Science (p. 16)	5		Core Social Science (p. 16)	3	
Core Social Science (p. 16)	3		Core Social Science (p. 16)	3		CTS 102 Orientation	1	
ROTC or PE	1-2		ROTC or HHP 195	1-2		ROTC or Elective	0-1	

College of Education

SOPHOMORE YEAR

EH 220 Great Books I	5	EH 221 Great Books II	5	RSE 310 Surv. Exc.	5
Social Science Options	10	Social Science Options	10	Social Science Options	10
ROTC or Elective	0-1	Core Fine Arts (p. 16)	3	EM 200 Ed. Media	2
		ROTC or Elective	1	ROTC or Elective	1

JUNIOR YEAR

Social Science Options	10	Social Science Options	10	Social Science Options	10
CTS 420 Sec. School	5	Core English (p. 16)	5	CTR 571 Reading *	5
FED 300 Ed. Psych.	5	FED 350 Cult. Fnd. *	5	CTS 421 Soc. Sci.	5

SENIOR YEAR

Social Science Options	10	Social Science Options	10	CTS 425 Internship *	15
FED 400 Eval. Meas. *	5	CTS 415 Curr. Trnd. *	3		
CTS 405 Tchg. SS *	3	EDL 401 Org. Adm. *	2		
CTS 410 Prog. SS *	3	CCP 322 Hum. Rel. *	2		

TOTAL HOURS — 213

* Prerequisite Admission to Teacher Education.

Health and Human Performance

Curriculum in Physical Education

First Quarter

Core English (p. 16)	5
Core History (p. 16)	3
HHP 100 Fund. Move.	3
HHP 201 Hy. & Prin.	5
HHP 102 Orientation	1
ROTC or Elective	1

FRESHMAN YEAR

Second Quarter

SM 101 Concepts Sci.	5
Core History (p. 16)	3
NFS 200 Nutr. & Hlth.	3
HHP 120 Gymnastics	3
PE 101 Phys. Fit. & App.	2
ROTC or Elective	1

Third Quarter

Core Math (p. 16)	5
Core History (p. 16)	3
HHP 122 Tr. Sport I	3
HHP 124 Tr. Sport II	2
HHP 211 Motor Dev.	3
ROTC or Elective	1

SOPHOMORE YEAR

EH 220 Great Books I	5	EH 221 Great Books II	5	Core Philosophy (p. 16)	5
BI 101/105	5	Core Social Science (p. 16)	3	Core Social Science (p. 16)	3
Core Social Science (p. 16)	3	Core Fine Arts (p. 16)	3	ZY 250 Anatomy	5
HHP 118 Ind. Act. I	3	HHP 195 Hlth. Sci.	2	HHP 119 Ind. Act. II	3
PE 135 Weight Trng.	2	ROTC or Elective	1	HHP 121 Aquatics	2
ROTC or Elective	1			ROTC or Elective	1

JUNIOR YEAR

ZY 251 Physiology	5	FED 300 Ed. Psych.	5	FED 350 Cult. Fnd. *	5
Core English (p. 16)	5	HHP 200 Tch. & Coach.	5	RSE 310 Surv. Exc.	5
CCP 322 Hum. Rel. *	2	HHP 404 Athl. Injuries	3	HHP 315 Kinesiology	4
HHP 123 Dance	3	HHP 405 Phys. of Exercise	4	HHP 494 First Aid/CPR	3
HHP 416 Adapt Pe	3			EM 200 Ed. Media	2

SENIOR YEAR

HHP 412 Instr. Strategies in PE *	3	CTR 571 Reading *	5	HHP 425 Internship *	15
EDL 401 Org. Adm. Ed. *	2	HHP 413 Tch. PE Elem. *	4		
HHP 429 Mtr. Lm. Pr.	4	HHP 414 Tch. PE Sec. *	4		
FED 400 Meas. & Eval. *	5	HHP 426 Eval. & Meas. *	3		
HHP Electives	3				

TOTAL HOURS — 206

* Prerequisite Admission to Teacher Education.

Rehabilitation and Special Education

Curriculum in Early Childhood Special Education

Fall Quarter

Core Math (p. 16)	5
Core English (p. 16)	5
Core Social Science (p. 16)	3
PE Activity	2
Elective	2
ROTC or Elective	1

FRESHMAN YEAR

Winter Quarter

Core Science (p. 16)	5
Core Philosophy (p. 16)	5
Core Social Science (p. 16)	3
HHP 195 Hlth. Sci.	2
ROTC or Elective	1

Spring Quarter

Core Science (p. 16)	5
Core Fine Arts (p. 16)	3
Core Social Science (p. 16)	3
Elective	2
ROTC or Elective	1

SOPHOMORE YEAR

RSE 100 Orientation	1	RSE 320 Intro. Spec. Ed.	5	Core History (p. 16)	5
RSE 310 Surv. Excep.	5	Core History (p. 16)	5	FED 300 Ed. Psych.	5
Core History (p. 16)	5	EH 221 Great Books II	5	HDF 301 Early & Mid. Ch. Dev.	5
EH 220 Great Books I	5	HDF 267 Prin., Theo. & Meth.	5	Electives	6
ROTC or Elective	1	ROTC or Elective	1	ROTC or Elective	1

JUNIOR YEAR

RSE 411 Assess. ECSE	5	RSE 442 Meth./Mat. ECSE	5	RSE 588 Ed. Appr. *	5
FED 400 Eval. Meas. *	5	RSE 550 Early Lang./Phys. Mgt. ..	5	RSE 420 Org. Inst. *	5
EM 200 Ed. Media	2	CCP 322 Hum. Rel. *	2	RSE 540 Collab./Consult.	5
Core English (p. 16)	5	HDF 473 Infant Development	4	RSE 495 Practicum	2
		EDL 401 Org. Adm. Ed. *	2		

College of Education

SENIOR YEAR

Approved Electives	5	Approved Electives	15	RSE 425 Internship *	15
RSE 435 Man. Behav. Sp. Ed.	5	RSE 495 Practicum	3		
RSE 495 Practicum	2				
FED 350 Cult. Fnd.*	5				

TOTAL HOURS — 204

* Prerequisite Admission to Teacher Education.

Curriculum in Mild Learning/Behavior Disabilities

FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
Core Math (p. 16)	5	Core Science (p. 16)	5	Core Science (p. 16)	5
Core English (p. 16)	5	Core Philosophy (p. 16)	5	Core Fine Arts (p. 16)	3
Core Social Science (p. 16)	3	Core Social Science (p. 16)	3	Core Social Science (p. 16)	3
PE	2	HHP 195 Hlth. Sci.	2	Approved Elective	5
ROTC or Elective	1	ROTC or Elective	1	ROTC or Elective	1

SOPHOMORE YEAR

RSE 100 Orientation	1	RSE 320 Intro. Spec. Ed.	5	Elective	5
RSE 310 Surv. Excep.	5	Core History (p. 16)	3	Core History (p. 16)	3
Core History (p. 16)	3	EH 221 Great Books II	5	FED 300 Ed. Psych.	5
EH 220 Great Books I	5	Elective	5	ROTC or Elective	1
EM 200 Ed. Media	2	ROTC or Elective	1		
ROTC or Elective	1				

JUNIOR YEAR

RSE 500 Mental Retardation	5	RSE 409 Assess. Sp. Ed.	5	RSE 378 Beh. Disorders	5
FED 400 Eval. Meas.*	5	RSE 501 Lrn. Disabilities	5	RSE 420 Org. Inst. Sp. Ed.	5
EDL 401 Org. Adm. Ed.*	2	CCP 322 Hum. Rel.*	2	RSE 540 Collab./Consult.	5
Core English (p. 16)	5	CTR 370 Reading	5	RSE 495 Practicum	2

SENIOR YEAR

RSE 440 Meth. Elem. Sp. Ed. *	5	RSE 441 Meth. Sec. Sp. Ed. *	5	RSE 425 Internship *	15
RSE 435 Manag. Beh. Sp. Ed.	5	RSE 520 Transition	3		
RSE 495 Practicum	3	RSE 495 Practicum	3		
FED 350 Cult. Fnd. *	5	CTR 570/571 Reading *	5		

TOTAL HOURS — 204

* Prerequisite Admission to Teacher Education.

Vocational and Adult Education

Curriculum in Agribusiness Education

FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
Core English (p. 16)	5	Core Science (p. 16) (CH req.)	5	Core Science (p. 16) (CH req.)	5
Core Math (p. 16)	5	Core Social Science (p. 16)	3	Core Social Science (p. 16)	3
Core Social Science (p. 16)	3	Core Fine Arts (p. 16)	3	Core Philosophy (p. 16)	5
VED 102 Orientation	1	COM Speech Elective	3	Ag. Elective	5
ROTC or PE	1-2	AEC 210 Microcomp.	3	ROTC or Elective	0-1
		ROTC or HHP 195	1-2		

SOPHOMORE YEAR

EH 220 Great Books I	5	EH 221 Great Books II	5	AY 307 Gen. Soils	5
Core History (p. 16)	3	Core History (p. 16)	3	AEC 301 Ag. Mktg.	4
EC/AEC 202 Economics I	5	ADS 200 An. Dairy Sci.	5	Core History (p. 16)	3
BI Elective	5	PH/FY Elective	5	Ag. Elective	6-8
ROTC or Elective	0-1	ROTC or Elective	1	ROTC or Elective	1

JUNIOR YEAR

HF 221 Landscape	5	FED 300 Ed. Psych.	5	FED 350 Cult. Fnd. *	5
HF 202 Fruit Veg.	5	CCP 322 Hum. Rel. *	2	EDL 401 Org. Adm.*	2
VED 408 Gen. Shop	3	VED 450 Special Topics	3	AEC 501 Farm Mgt.	5
VED 406 or 407	3	RSE 310 Surv. Exc.	5	Core English (p. 16)	5
EM 200 Ed. Media	2	VED 346 Voc. Educ.	3-5		

SENIOR YEAR

VED 414 Prog. Ag.*	3	VED 495 Practicum	3	VED 425 Internship *	15
VED 415 Tchg. Ag.*	5	VED 462 Dir. Work Exper.	5		
ENT 502 Ec. Entom.	5	CTR 571 Reading*	5		
FED 400 Meas. Eval.*	5				

TOTAL HOURS — 210

* Prerequisite Admission to Teacher Education.

Curriculum in Business and Office Education

FRESHMAN YEAR

First Quarter	Second Quarter	Third Quarter
Core English (p. 16) 5	Core Philosophy (p. 16) 5	Core Math (p. 16) 5
Core Science (p. 16) 5	Core Science (p. 16) 5	Core Social Science (p. 16) 3
Core Social Science (p. 16) 3	Core Social Science (p. 16) 3	EM 200 Ed. Media 2
VED 102 Orientation 1	COM Speech Elective 3	EC 202 Economics I 5
Core Fine Arts (p. 16) 3	ROTC or HHP 195 1-2	ROTC or Elective 0-1
ROTC or PE 1-2		

SOPHOMORE YEAR

EH 220 Great Books I 5	EH 221 Great Books II 5	AC 212 Accounting II 4
VED 200 Keyboarding I 3	AC 221 Accounting I 4	FED 300 Ed. Psych. 5
AC 241 Bus. Law 5	VED 201 Keyboarding II 3	VED 302 Adv. Keyboarding 5
Core History (p. 16) 3	Core History (p. 16) 3	Core History (p. 16) 3
ROTC or Elective 0-1	ROTC or Elective 1	ROTC or Elective 1

JUNIOR YEAR

RSE 310 Surv. Exc. 5	VED 312 Shand. Tr. 5	FED 350 Cult. Fnd. 5
Core English (p. 16) 5	CCP 322 Hum. Rel. * 2	FED 400 Meas. Eval. 5
MN 310 Prin. Mgt. 5	VED 346/541 Dev. V. Ed. 3-5	VED 430 Adv. Info. 5
FI 340/HDF 323 Fin./Cons. 3-5	VED 420 Info. Proc. 5	VED/Bus. Elective 0-4
	EDL 401 Org. Adm. * 2	

SENIOR YEAR

VED 574 Org. Inst. 5	VED 558 Coord. Supr. 5	VED 425 Internship * 15
VED 414 Prog. Bus. * 3	CTR 571 Reading * 5	
VED 415 Tchg. Bus. * 5	VED 462/422 Work Exp./Int. 5-10	
VED 440 Elec. Off. 5	VED/Bus. Elective 0-5	

TOTAL HOURS — 209

* Prerequisite Admission to Teacher Education.

Curriculum in Trade and Industrial Education (VTI)

FRESHMAN YEAR

First Quarter	Second Quarter	Third Quarter
Core English (p. 16) 5	Core Science (p. 16) 5	Core Science (p. 16) 5
Core Math (p. 16) 5	Core Social Science (p. 16) 3	Core Social Science (p. 16) 3
Core Social Science (p. 16) 3	Core History (p. 16) 3	Core History (p. 16) 3
Core History (p. 16) 3	VED 475 Trade/Tech. Exp. 5	COM Speech Elective 3
ROTC or PE 1-2	ROTC or HHP 195 1-2	VED 102 Orientation 1
		ROTC or Elective 0-1

SOPHOMORE YEAR

EH 220 Great Books I 5	EH 221 Great Books II 5	EM 200 Ed. Media 2
VED 476-477 Tr./Tech. Exp. 10	VED 478-479 Tr./Tech. Exp. 10	Core Philosophy (p. 16) 5
ROTC or Elective 0-1	Elective(s) 3	VED 480 Tr./Tech. Exp. 10
	ROTC or Elective 1	Core Fine Arts (p. 16) 3
		Elective 2
		ROTC or Elective 1

JUNIOR YEAR

MN 310 Prin. Mgt. 5	FED 300 Ed. Psych. 5	VED 462 Dir. Wk. Exp. 5
Core English (p. 16) 5	RSE 310 Surv. Exc. 5	EDL 401 Org. Adm. Sch. * 2
VED 520 Tch. Stu. Sp. Needs 5	VED 346 Voc. Ed. 0r	CCP 322 Hum. Rel. * 2
	VED 541 Dev. Voc. Ed. 3-5	CTR 571 Reading * 5
	MN 443 Labor Relations 5	VED 495 Practicum 3

SENIOR YEAR

VED 574 Org. Inst. TI 5	VED 414 Prog. T&I * 3	VED 425 Internship * 15
FED 350 Cult. Fnd. * 5	VED 415 Tchg. T&I * 5	
VED 558 Coord. Supr. 5	FED 400 Meas. Eval. * 5	
VED 510 Occ. Info. 3	VED 556 Lmg. Res. 5	

TOTAL HOURS — 204

* Prerequisite Admission to Teacher Education.

Curriculum in Marketing Education (VMK)**

FRESHMAN YEAR

First Quarter	Second Quarter	Third Quarter
Core English (p. 16) 5	Core Science (p. 16) 5	Core Science (p. 16) 5
Core Math (p. 16) 5	Core Social Science (p. 16) 3	Core Social Science (p. 16) 3
Core Social Science (p. 16) 3	COM Elective 3	EM 200 Ed. Media 2
VED 102 Orientation 1	Core Fine Arts (p. 16) 3	Core Philosophy (p. 16) 5
ROTC or PE 1-2	ROTC or HP 195 1-2	ROTC or Elective 1

SOPHOMORE YEAR

EH 220 Great Books I 5	EH 221 Great Books II 5	FED 300 Ed. Psych. 5
Core History (p. 16) 3	Core History (p. 16) 3	Core History (p. 16) 3
EC 202 Economics I 5	EC 203 Economics II 5	RSE 310 Surv. Exc. 5
AC 211 Prin. Accounting I 4	AC 241 Bus. Law 5	ROTC or Elective 1
ROTC or Elective 0-1	ROTC or Elective 1	

College of Education

JUNIOR YEAR

MT 331 Prin. Mkt.	5	VED 450 Special Topics	5	VED 556 Lm. Resources	5
MN 310 Prin. Mgt.	5	MT 341 Buyer Behavior	5	VED 462 Dir. Wk. Exp.	5
FED 350 Cult. Fnd. Educ. *	5	MT 373 Intro. Phys. Dist.	5	MT Approved 300-500	5
VED 346 or 541 Voc./Adult Ed.	3-5	CCP 322 Hum. Rel. *	2	EDL 401 Org. Adm. *	2

SENIOR YEAR

VED 414 Prog. DE *	3	CTR 571 Reading *	4	VED 425 Internship *	15
VED 415 Tchg. DE *	5	VED 558 Coord.	5	.....	.....
Core English (p. 16)(EH 408 req.)	5	FED 400 Meas. and Eval. Ed. *	5	.....	.....
MT Approved 300-500	5	VED/PR Approved Elective	5	.....	.....

TOTAL HOURS — 202

* Prerequisite Admission to Teacher Education.

** No more than 25 percent of the required hours for graduation may be taken in courses offered by the College of Business.

Field Experiences

The Laboratory Experiences Program provides sequential learning opportunities in public school and community settings for students throughout the teacher preparation program. Laboratory experiences are provided primarily through the following programs: (1) Field Experience Program, (2) Extended Laboratory Experiences, (3) Cooperative Education Program and (4) Professional Internship.

The pre-teaching Field Experience Program provides an initial experience for all students as a prerequisite for admission to the Professional Teacher Education Program. This experience involves the students in planning and evaluating learning experiences, counseling, participating in pre-school conferences and faculty study, school and community meetings and involvement in actual teaching situations.

The Extended Laboratory Experiences Program is conducted concurrently with enrollment in professional education courses which provide experiences in the schools and communities.

The Cooperative Education Program provides laboratory experiences for certain students involved in the teacher preparation program on an alternating quarter arrangement with college attendance.

The Professional Internship is a full-time assignment in an off-campus school and community. Experiences include personal and professional contacts with phases of community life and the application of concepts, skills and knowledge the students have acquired in classroom situations.

The students enroll for 15 credit hours and devote a full quarter to the internship. No additional course work, correspondence or regular, is permitted during the internship quarter. The program is divided into orientation, off-campus experience and evaluation. Students must be admitted to the Teacher Education Program prior to the Professional Internship and must have completed appropriate courses in their areas of specialization.

The Internship in N-12 Programs requires experience in elementary and secondary schools.

Other laboratory experiences for students are provided within the framework of courses in the Teacher Education Program.

Dual Objectives Program

Students in other schools and colleges of the university who wish to complete requirements for graduation in an academic department and also to complete the degree requirements of the Teacher Education Program may pursue the dual objectives program. Students should inquire in their dean's office to determine if their college/school participates in the dual objectives program.

Students electing to pursue the dual objectives program will have an advisor in the academic department in which they are enrolled and an advisor in the College of Education. Advising students concerning the curriculum of the academic department, including the major and other requirements, will be the responsibility of the advisor in that department. The responsibility for advising students on matters concerning the Teacher Education Program will be that of the advisor in the College of Education. The quarterly course schedule of the students will be approved by both advisors. Information describing the dual objectives program is available in the Teacher Education Services Office of the College of Education in Haley Center and in the dean's office where the students are enrolled.

Students enrolled in the College of Education who desire to complete certification requirements in more than one teaching field will complete the curriculum in each field: general studies, teaching specialization and professional teacher education (including the internship).

Applications and specific information about the criteria for selection and admission to Teacher Education are available in the Teacher Education Services Office in Haley Center 3464.

Programs, Non-Teaching

The following is a list of non-teaching curricula available in the College of Education. Programs appear by department.

Health and Human Performance

Exercise Science. A non-teaching program to prepare students for research and graduate studies related to exercise sciences. This program does not require admission to Teacher Education. A senior paper (HHP 446) is required for graduation.

Curriculum in Exercise Science

FRESHMAN YEAR						
First Quarter			Second Quarter		Third Quarter	
EH 110/115	5	PS 200 Fnds. Physics	5	MH 160	5	
HY 101/121/U270	3	HY 102/122/U271	3	HY 103/123/U272	3	
BI 101 or 105	5	BI 106 Hum. Biol.	5	COM 100 Prof. Comm.	3	
HHP 102 Orientation	1	Core Fine Arts (p. 16)	3	HHP 195 Hlth. Sci.	2	
PE 101 Physical Fitness	2	PE Skill	2	PE Skill	2	
SOPHOMORE YEAR						
EH 220 Great Books I	5	ZY 221 Great Books II	5	PA 101/102/218/219	5	
ZY 250 Anatomy	5	ZY 251 Physiology	5	EM 200 Ed. Media	2	
U 101 Soc., Cult. & Environ.	3	U 102 Political Economy	3	U 103 Individual & Society	3	
HHP 201 Fnd. of HHP	5	NFS 200 Nutr. & Hlth.	3	PG 212 Dev. Psych.	5	
PE Fitness	2	PE Fitness	2	ROTC or Elective	3	
JUNIOR YEAR						
EM 370 Microcomp.	4	HHP 315 Kinesiology	4	HHP 426 Eval. & Meas.	3	
EH Adv. Comp. (p. 16)	5	HHP 405 Phys. of Exerc.	4	HHP 495 Practicum	2	
HHP 335 Sports Psych.	4	HHP 396 Drug Use Abuse	3	Minor Electives	6	
HHP 211 Motor Dev.	3	Minor Electives	6	ROTC or Electives	3	
SENIOR YEAR						
HHP 495 Practicum	2	HHP 495 Practicum	2	HHP 446 Sr. Project	5	
HHP 429 Mtr. Learning	4	HHP 416 Adaptive PE	3	HHP 505 Pr. Adult Fit.	4	
HHP 404 or 494	3	HHP Electives	3	HHP Electives	3	
HHP Elective	3	Minor Electives	7	Minor Elective	3	
Minor Elective	3					
TOTAL HOURS — 200						

Health Promotion. A non-teaching program to prepare students to become health and fitness specialists for a variety of settings such as hospitals, corporate fitness centers, wellness centers and private/commercial health complexes. This program does not require admission to Teacher Education. However, a related internship (HHP 425) is an integral part of the professional preparation.

Curriculum in Health Promotion

FRESHMAN YEAR					
First Quarter		Second Quarter		Third Quarter	
EH 110/115	5	Computer Elective	3	MH 160	5
HY 101/121/U270	3	HY 102/122/U271	3	HY 103/123/U272	3
BI 101/105	5	BI 106 Hum. Biol.	5	NFS 200 Nutr. & Hlth.	2
HHP 102 Orientation	1	COM 100 Prof. Comm.	3	EM 200 Ed. Media	2
PE Fitness	2	PE Fitness	2	HHP 201 Fnd. of HHP	5
		PE 101 Physical Fitness	2		
SOPHOMORE YEAR					
EH 220 Great Books I	5	EH 221 Great Books II	5	PA 101/102/218/219	5
ZY 250 Anatomy	5	ZY 251 Physiology	5	Core Fine Arts (p. 16)	3
U 101 Soc., Cult. & Environ.	3	U 102 Political Economy	3	U 103 Individual & Society	3
HHP 195 Hlth. Sci.	2	GS Elective	2	GS Elective	2
PE	2	HHP Hlth. Sci. Elective	3	HHP Hlth. Sci. Elective	3
				PE Elective	5
JUNIOR YEAR					
GS Elective	2	HHP 426 Eval. & Meas.	3	EH 400/401/404/408	5
HHP 386 Leadership	3	HHP 494 Em. Care/First Aid	3	HHP 400 Program	3
HHP 296 Comm. Hlth.	3	HHP 405 Phys Exercise	4	HHP Exer. Sci. Elective	4
HHP 315 Kinesiology	4	HHP Option Area	3	Minor Elective	5
Minor Elective	5	HHP Option Area	3		

College of Education

SENIOR YEAR

HHP Option Area	4	HHP 475 Hlth. Prom. Wkp.	3	HHP 425 Intern	15
HHP Option Area	4	HHP Option Area	4		
Minor Elective	5	HHP Option Area	4		
Minor Elective	4	Minor Elective	3		
		Minor Elective	3		

TOTAL HOURS — 204

Rehabilitation and Special Education

Rehabilitation Services Education. This non-teaching program does not require completion of the Professional Education Core.

Curriculum in Rehabilitation Services

First Quarter			FRESHMAN YEAR			Third Quarter		
			Second Quarter					
EH 110 Eng. Comp.	5		Core Science (p. 16)	5		Core Science (p. 16)	5	
U 101 Soc., Cult. & Environ.	3		U 102 Polit. Econ.	3		U 103 Individual & Society	3	
Core History (p. 16)	3		Core History (p. 16)	3		Core History (p. 16)	3	
COM 100 Prof. Comm.	3		Elective	5		Core Philosophy (p. 16)	5	
PE	2		ROTC or Elective	1		ROTC or Elective	1	
ROTC or Elective	1							
			SOPHOMORE YEAR					
EH 220 Great Books I	5		EH 221 Great Books II	5		Elective	1	
Core Math (p. 16)	5		RSE 310 Surv. Exc.	5		FED 300 Ed. Psych.	5	
Core Fine Arts (p. 16)	3		ZY 251 Physiology	5		CCP 322 Hum. Rel.	2	
ZY 250 Anatomy	5		ROTC or Elective	1		PG 201 Psychology	5	
ROTC or Elective	1					RSE 330 Careers Rehab.	5	
						ROTC or Elective	1	
			JUNIOR YEAR					
Elective	2		RSE 495 R Practicum	3		RSE 414 Assessment	3	
FED 350/Soc. Elective	5		CCP 523 Med. Aspects	3		RSE 537 Transition	5	
CCP 522 Counseling	4		CCP 524 Comm. Resources	3		RSE 495 R Practicum	2	
PG 304 Quant. Meth.	5		CCP 525 Adjustment	3		RSE 446 Dir. Ind. Study	5	
			EH Adv. Comp. (p. 16)	3		Elective	6	
			SENIOR YEAR					
RSE 535 Voc. Eval.	5		RSE 495 R Practicum	2		RSE 425 Intern	15	
RSE 538 Work Adjustment	5		RSE 510 Occ. Info.	3				
RSE 495 R Practicum	3		RSE 536 Voc. Eval.	3				
Elective	5		RSE 556R Rehab. Technology	4				
			RSE 415 Prof. Comm.	3				

TOTAL HOURS — 204

Vocational and Adult Education

Curriculum in Adult Education - Agriculture

First Quarter			FRESHMAN YEAR			Third Quarter		
			Second Quarter					
EH 110 Eng. Comp.	5		CH 103 Fund. Chem.	4		CH 104 Fund. Chem.	4	
U 101 Soc., Cult. & Environ.	3		CH 103L Gen. Chem. Lab	1		CH 104L Gen. Chem. Lab	1	
Core Math (p. 16)	5		U 102 Political Economy	3		U 103 Individual & Society	3	
VED 102 Orientation	1		Core History (p. 16)	3		Core History (p. 16)	3	
BI 101 Prin. Biol.	5		Core Fine Arts (p. 16)	3		ADS 200 A&D Sci.	5	
ROTC or Elective	1		Core Philosophy (p. 16)	5		ROTC or Elective	1	
			ROTC or Elective	1				
			SOPHOMORE YEAR					
EH 220 Great Books I	5		EH 221 Great Books II	5		HF 221 Landsc. Gard.	5	
EC/AEC 200 Econ.	5		Ag. Elective	3		Ag. Elective	5	
HF 202 Fruit & Veg.	5		AY 200 Crop Prod.	5		FED 300/PG 212	5	
Core History (p. 16)	3		AEC 200 Microcomputer	3		ROTC or Elective	1	
ROTC or Elective	1		ROTC or Elective	1				
			JUNIOR YEAR					
AEC 301 Ag. Mkt.	5		AY 307 Gen. Soils	5		Ag. Elective	5	
Ag. Elective	5		VED 469 Comm. Prog.	5		Ag. Elective	5	
VED 408 Gen. Shop	3		Ag. Elective	5		Voc. Ed. Elective	5	
VED 406 Bldg. Const.	3					EH Adv. Comp. (p. 16)	4	
VED 466 Tch. OS Gr.	3							

College of Education

SENIOR YEAR

ENT 502 Entomology	5	VED 556 Lrn. Res.	5	VED 425 Intern	10
VED 513 Na. Adult. Ed.	5	VED 415 Tch. Adult Ed.	5		
VED Elective	4	AEC 501 Farm Mgt.	5		
VED 450 Spec. Top.	3				

TOTAL HOURS — 204

Curriculum in Adult Education - Distributive *

FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
EH 110 Eng. Comp.	5	EM 200 Ed. Media	2	Core Philosophy (p. 16)	5
Core Math (p. 16)	5	Distrib. Elective	4	Elective	5
U 101 Soc., Cult. & Environ.	3	U 102 Polit Econ.	3	U 103 Individual & Society	3
Core History (p. 16)	3	Core History (p. 16)	3	Core History (p. 16)	3
VED 102 Orientation	1	Core Fine Arts (p. 16)	3	ROTC or Elective	1
ROTC or Elective	1	ROTC or Elective	1		

SOPHOMORE YEAR

EH 220 Great Books I	5	EH 221 Great Books II	5	VED 466 Tch. OS Gr.	3
Core Science (p. 16)	5	Core Science (p. 16)	5	AC 211 Prin. Acct. I	4
EC 200 Econ. I	5	EC 202 Econ. II	5	MT 241 Bus. Law I	5
ROTC or Elective	1	ROTC or Elective	1	PG 212 Dev. Psych.	5
				ROTC or Elective	1

JUNIOR YEAR

MN 310 Prin. Mgt.	5	VED 469 Comm. Prog.	5	VED 415 Tchg. Ad. Ed.	5
MT 331 Prin. Mkt.	5	MT 347 Food. Selling	5	MT 372 Prin. Transport.	5
EM 370 Microcomputers	4	FED 400 Meas. Eval.	5	VED 462 Dir. Wk. Exp.	5
EH Adv. Comp. (p. 16)	5	VED 346 Voc. Ed.	3	Distrib. Elective	3

SENIOR YEAR

VED 450 Sp. Top. AE	3	VED 513 Nat. Adult Ed.	5	VED 425 Intern	15
VED 556 Lrn. Res.	5	VED 104 Orientation Lab	1		
CCP 521 Counseling	4	VED 446 Dir. Ind. Study	5		
Distrib. Elective	5	Distrib. Elective	5		

TOTAL HOURS — 204

* No more than 25 percent of the required hours for graduation may be taken in courses offered by the College of Business.

Curriculum in Adult Education - Health Systems

FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
EH 110 Eng. Comp.	5	HHP 195 Hlth. Sci.	2	Core Philosophy (p. 16)	5
U 101 Soc., Cult. & Environ.	3	U 102 Political Economy	3	U 103 Individual & Society	3
Core History (p. 16)	3	Core History (p. 16)	3	Core History (p. 16)	3
VED 102 Orientation	1	Core Math (p. 16)	5	Core Fine Arts (p. 16)	3
ROTC or Elective	1	Elective	2	Elective	2
Elective	2	ROTC or Elective	1	ROTC or Elective	1

SOPHOMORE YEAR

EH 220 Great Books I	5	EH 221 Great Books II	5	MT 241 Bus. Law	5
Core Science (p. 16)	5	Core Science (p. 16)	5	EM 370 Computer	4
VED 352 Med. Term.	5	VED 356 Hlth. Del. Syst.	5	FED 300/PG 212	5
ROTC or Elective	1	Hlth. Syst. Elective	3	Hlth. Syst. Elective	4
		ROTC or Elective	1	ROTC or Elective	1

JUNIOR YEAR

VED 556 Lrng. Res.	5	VED 450 Sp. Topics	3	VED 462 Dir. Wk. Exp.	5
VED 466 Tch. OS Gr.	3	VED 469 Comm. Prog.	5	VED 476 Tech. Exp.	or
MN 310 Prin. Mgt.	5	VED 495 Practicum	2	Hlth. Syst. Elective	5
Hlth. Syst. Elective	5	VED 513 Nat. Adult Ed.	5	VED 477 Tech. Exp.	or
		VED 475 Tech. Exp.	or	Hlth. Syst. Elective	5
		Hlth. Syst. Elective	5	EH Adv. Comp. (p. 16)	5

SENIOR YEAR

VED 478 Tech. Exp.	or	VED 480 Tech. Exp.	or	VED 425 Intern	10
Hlth. Syst. Elective	5	Hlth. Syst. Elective	5		
VED 479 Tech. Exp.	or	VED 104 Orient. Lab	1		
Hlth. Syst. Elective	5	VED 495 Practicum	3		
CCP 521 Counseling	4	Hlth. Syst. Electives	8		
VED 495 Practicum	3				

TOTAL HOURS — 204

Curriculum in Adult Education - Home Economics

FRESHMAN YEAR

First Quarter

EH 110 Eng. Comp.	5
U 101 Soc., Cult. & Environ.	3
VED 102 Orientation	1
HDF 157 Fam. Hum. Dev.	3
CA 115 Clothing & Culture	3
ROTC or Elective	1

Second Quarter

CA 116 Art for Living	3
U 102 Political Economy	3
Core Science (p. 16)	2
Elective	2
ROTC or Elective	1

Third Quarter

NFS/CA/HDF	5
U 103 Individual & Society	3
Core Science (p. 16)	5
ROTC or Elective	1

SOPHOMORE YEAR

Core Philosophy (p. 16)	5
Core History (p. 16)	3
NFS/CA/HDF	8
ROTC or Elective	1

EH 220 Great Books I	5
Core History (p. 16)	3
Core Fine Arts (p. 16)	3
NFS/CA/HDF	6
ROTC or Elective	1

EH 221 Great Books II	5
Core History (p. 16)	3
FED 300 Ed. Psych.	5
NFS/CA/HDF	4
ROTC or Elective	1

JUNIOR YEAR

EM 370/570	4
NFS/CA/HDF	12

VED 462 Dir. Wk. Exp.	5
CCP 521 Counseling	4
NFS/CA/HDF	7

EH Adv. Comp. (p. 16)	5
VED 466 Tch. OS Gr.	3
Electives	9

SENIOR YEAR

VED 495 Practicum	5
VED 489 Comm. Prog.	5
VED 556 Lrng. Res.	5
Elective	2

VED 415 Tchg. Adults	5
VED 104 Orient Lab	1
VED 513 Nat. Adult Ed.	5
Elective	4

VED 425 Intern	10
VED 450 Sp. Topics	3

TOTAL HOURS — 204

Curriculum in Adult Education - Technical

FRESHMAN YEAR

First Quarter

EH 110 Eng. Comp.	5
Core Fine Arts (p. 16)	3
U 101 Soc., Cult. & Environ.	3
Core History (p. 16)	3
Elective	3
ROTC or Elective	1

Second Quarter

Elective	3
Core Math (p. 16)	5
U 102 Political Economy	3
Core History (p. 16)	3
VED 102 Orientation	1
ROTC or Elective	1

Third Quarter

Core Science (p. 16)	5
Core Philosophy	5
U 103 Individual & Society	3
Core History (p. 16)	3
ROTC or Elective	1

SOPHOMORE YEAR

EH 220 Great Books I	5
Core Science (p. 16)	5
VED 475-480	or
Technical Elective	5
Elective	3
ROTC or Elective	5

EH 221 Great Books II	5
EM 370 Comp. App.	4
VED 475-480	or
Technical Elective	5
ROTC or Elective	1

VED 415 Tch. Adults	5
VED 450 Spec. Topics	3
VED 475-480	or
Technical Elective	5
VED 489 Comm. Prog.	5
ROTC or Elective	1

JUNIOR YEAR

VED 513 Nat. Adtt.	5
VED 475-480	or
Technical Elective	5
VED 541 Dev. V Ed.	5
VED 466 Tch OS Gr.	3

FED 300 Ed. Psych.	5
VED 475-480	or
Technical Elective	5
VED 574 Org. Instruct.	5
VED 510 Occ. Info.	3

FED 400 Meas. Eval.	5
VED 475-480	or
Technical Elective	5
VED 520 Stu. Sp. Nds.	5
EH Adv. Comp. (p. 16)	5

SENIOR YEAR

VED 591 Prob. Tchg.	5
VED 558 Coord.	5
VED 446/495/462	5

VED 556 Learn. Res.	5
VED 104 Orient Lab	1
VED 521 Counseling	4
VED 446/495/462	5

VED 425 Intern	10
VED 446/495/462	3

TOTAL HOURS — 204

Curriculum in Adult Education - Training and Conference

FRESHMAN YEAR

First Quarter

EH 110 Eng. Comp.	5
U 101 Soc., Cult. & Environ.	3
Core History (p. 16)	3
VED 102 Orientation	1
Core Math (p. 16)	5
ROTC or Elective	1

Second Quarter

Core Fine Arts (p. 16)	3
U 102 Political Economy	3
Core History (p. 16)	3
EM 200 Ed. Media	2
JM 101 Newsp. Style	3
Elective	2
ROTC or Elective	1

Third Quarter

Core Philosophy (p. 16)	5
U 103 Individual & Society	3
Core History (p. 16)	3
COM 141 Grp. Prob.	5
ROTC or Elective	1

SOPHOMORE YEAR

EH 220 Great Books I	5
Core Science (p. 16)	5
MT 241 Bus. Law	5
ROTC or Elective	1

EH 221 Great Books II	5
Core Science (p. 16)	5
JM 304 Int. Pub. Rel.	5
ROTC or Elective	1

VED 466 Tch. OS Gr.	3
EM 370 Computer	4
FED 300/PG 212	5
Elective	3
ROTC or Elective	1

College of Education

JUNIOR YEAR

MN 310 Prin. Mgt.	5	VED 469 Comm. Prog.	5	VED 415 Tch Ad. Ed.	5
FED 400 Meas. Eval.	5	MN 342 Hum. Res. Mgt.	5	VED 556 Lrng. Res.	5
EH 408 B&P Writ.	5	CCP 521 Counseling	4	Elective Area Sp.	5
Elective Area Sp.	3	VED 495 Practicum	3	VED 495 Practicum	3

SENIOR YEAR

VED 450 Spec. Topics	3	VED 513 Nat. Adlt. Ed.	5	VED 425 Intern	15
Elective	5	VED 104 Orient. Lab.	1		
PG 562 Trng. Supv.	3	VED 591 Prob. Dis. Ad.	5		
Elective Area Sp.	5	Elective Area Sp.	5		
VED 446 Dir. Ind. Study	2	VED 446 Dir. Ind. Study	2		

TOTAL HOURS — 204

Minors

Adult Education: 25 credit hours. Students are required to take the following : VED 415-F, 466, 469, 513. The remaining eight hours are selected from the following: 450F, 510, 520, 524 and 591. Not available to the following Adult Education majors — Agriculture, Distributive, Health Systems, Home Economics, Technical and Training and Development.

Office Management Systems: 25 credit hours. Students select from the following: VED 200*, 201*, 302*, 305, 312*, 420, 430, 440 and 524. Not available to Business Education majors.

* Advanced placement credit will not be counted toward hours in minor.

Graduate Programs

Graduate programs are offered through the Graduate School in administration and supervision, counselor education, educational media, elementary education, music education, physical education, rehabilitation services, secondary education, special education and vocational and adult education. Fifth and sixth-year programs of study in the above areas lead to the degrees of Master of Science, Master of Education, and Specialist in Education. Non-degree graduate study is also available through the Diploma Program leading to sixth-year certification.

Doctoral degrees are offered in educational leadership, counselor education, early childhood education, elementary education, music education, physical education, secondary education, rehabilitation, special education and vocational and adult education. Specializations in secondary education include the following sub-specializations: (a) English education, (b) mathematics education, (c) science education and (d) social science education. See the Graduate School section in this *Bulletin* for program options for Doctor of Education and Doctor of Philosophy degrees.

Related Programs and Services

Teacher Certification Services

Programs in the College of Education are approved by the National Council for Accreditation of Teacher Education (NCATE), the National Association of State Directors of Teacher Education and Certification (NASDTEC), the Interstate Reciprocity Compact (IRC) and the Alabama State Board of Education for certifying superintendents, supervisors, principals, counselors, elementary and secondary teachers and educational media specialists. Upon satisfactory completion of a prescribed course of study and upon recommendation of the Dean of the College of Education a professional certificate will be issued by the appropriate State Department of Education. Twenty-eight State Departments of Education now have reciprocal agreements for issuing certificates to graduates of institutions accredited by NCATE.

Students in the School of Human Sciences who wish to complete requirements for graduation in an academic department and also to complete the degree requirements of the Teacher Education Program may pursue the dual objectives program. Students may also take courses in education and psychology for acquiring knowledge and understanding of human growth and development and teaching as a profession. They are eligible to take all such courses for which they satisfy prerequisites.

Students may complete courses in preparation for entering the Fifth-Year Program which offers initial teacher certification at the master's level. Information about the Fifth-Year Program is available from the departmental office where the program is offered. See the Graduate School section in this *Bulletin* for more information.

Vocational Rehabilitation Service

DAVID PATTERSON, *Liaison Counselor*

The State Department of Education in cooperation with Auburn University maintains the local Rehabilitation Service which provides vocational guidance, counseling, training and placement services to disabled citizens. The Rehabilitation Service also makes available to disabled citizens such services as: surgical and/or medical care, hospitalization, therapeutic treatment, and artificial appliances, when these services are essential to training and/or employment and the individual is not financially able to secure them.

Learning Resources Center

The Learning Resources Center (LRC), located in Haley Center, is a service component for the College of Education and the College of Liberal Arts. The LRC provides media services which include filmstrips, transparencies, disc recordings, tape recordings, kits, educational games and programs of instruction. LRC personnel assist the faculty and students with the production, selection and utilization of learning materials.

College of Engineering

WILLIAM F. WALKER, *Dean*

M. DAYNE ALDRIDGE, *Associate Dean*

LARRY D. BENEFIELD, *Associate Dean*

JAMES O. BRYANT JR., *Associate Dean*

JOHN M. OWENS, *Associate Dean*

ENGINEERS ARE FACED with worldwide problems and expectations awesome in responsibility, yet exciting as professional challenges. These range from the extremes of interplanetary exploration through earth orbiting systems to the problems arising from our population explosion: energy, better productivity, housing, transportation and environmental issues.

As a renewed appreciation develops for the contributions of science and technology, engineering leaders are calling for engineers, who are better equipped to tackle the specific, technical problems of the future. They also are calling for engineers who by breadth of education and understanding of other disciplines can convince others of the role of engineers not only in technical matters but in policy decisions to ensure the use of technology to benefit mankind.

Engineering education at Auburn provides in a four-year curriculum both the technical knowledge and the broad general education necessary to equip engineers for their problem-solving challenges. Centered on mathematics and the physical sciences, the curricula also stress the importance of social sciences, humanities and communication skills. Auburn's engineering programs enable individuals to develop their natural talents and provide knowledge, skills and understanding that will help them to find their places in society as well as in their vocations.

Admission

Freshmen eligibility is determined by the Admissions Office. However, since the requirements for engineering education necessitate high school preparatory work of high intellectual quality and of considerable breadth, the following program is recommended as minimum preparation: English, four units; mathematics (including algebra, geometry, trigonometry, and analytical geometry), four units; chemistry, one unit; history, literature, social science, two or three units. Physics and foreign languages are recommended but not required.

Transfers from Other Institutions must apply through the Admissions Office. The exact placement of these students can be determined only upon review of their transcripts by the College of Engineering. See "Admission of Transfer Students" in the General Information section for complete requirements.

The College of Engineering allows credit for courses completed with satisfactory grades (**C** or better) provided the courses correspond in time and content to courses offered at Auburn. Courses that are taught at the 300-level or higher at Auburn are generally not transferable from junior colleges.

Many courses required by the College of Engineering are highly specialized in their content and potential transfer students need to select courses with care. Therefore, to ensure maximum transferability of credits, students are encouraged to contact the College as soon as possible about acceptable credits.

Transfers from On-Campus must be approved by the College of Engineering and the admissions committee of the chosen curriculum, and meet the same academic requirements as off-campus transfer students. **The criteria include a minimum overall Auburn GPA of 2.8 and the completion of the first mathematics course listed in the chosen curriculum with a grade of C or better.**

Programs

Undergraduate

Pre-Engineering — The Pre-Engineering Program consists of a freshman program of studies to prepare students for curricula in the College of Engineering. It also provides academic and career counseling to assist students in determining the curriculum that best fulfills their personal and educational objectives.

Professional Programs — Curricula accredited by the national accrediting agency, the Engineering Accreditation Commission of the Accreditation Board for Engineering and Tech-

nology (ABET), lead to the degrees of Bachelor of Aerospace Engineering, Chemical Engineering, Civil Engineering, Computer Engineering, Electrical Engineering, Industrial Engineering, Materials Engineering, Mechanical Engineering, Bachelor of Science in Agricultural Engineering and Bachelor of Science in Forest Engineering. The curriculum leading to the Bachelor of Computer Science is accredited by the Computer Science Association Commission of the Computing Sciences Accreditation Board. The curriculum leading to the Bachelor of Textile Management and Technology is accredited by the Technology Accreditation Commission of ABET. The Department of Textile Engineering also administers curricula leading to the degrees of Bachelor of Textile Engineering and Bachelor of Textile Chemistry which along with the Textile Management and Technology curriculum are accredited by the Textile Institute, an international organization headquartered in Great Britain which reviews textile academic programs worldwide. The programs in the Department of Textile Engineering are designed to prepare one for a career in one of the facets of the textile industry. The curriculum leading to the Bachelor of Science in Forest Engineering (forest resources concentration) is accredited by the Society of American Foresters (SAF).

These curricula are designed to meet the educational requirements of the engineering professions. The program in the fundamental sciences of mathematics, chemistry and physics is followed by a study of basic engineering sciences. Specialized or departmental courses are taken in the third and fourth years. Flexibility is provided in all degree programs through electives so that the individual may emphasize areas of personal interest.

Others — The Bachelor of Aviation Management degree (administered by the Aerospace Engineering Department) provides education for management careers with the airlines, general aviation, airports and other industries.

The Bachelor of Science in Forest Engineering is offered jointly by the Agricultural Engineering Department and the School of Forestry. The curriculum combines professional courses in engineering and forestry for students who want careers in forest industries that require training in both engineering and forestry.

Dual-Degree — The College of Engineering has agreements with several predominantly liberal arts institutions to offer an academic program where a student can earn two baccalaureate degrees. Under the terms of this program the first three years of study are devoted to earning a major in any one of the disciplines offered by the institution first entered, while completing the basic sciences and mathematics courses required for pre-engineering at Auburn.

Upon completion of three years of study in the liberal arts the student transfers to the College of Engineering. After a minimum of two years of study in an engineering curriculum, the student earns degrees from both institutions. The broad background provided by this program may enable a student to cope more effectively with many of the problems of modern-day society.

Dual degree agreements have also been made with Auburn University's Colleges of Agriculture, Liberal Arts and Sciences and Mathematics, to provide for dual degree programs with the College of Engineering.

Graduate — The College of Engineering offers the M.S. and Ph.D. degrees in aerospace, agricultural, chemical, civil, computer science and engineering, electrical, industrial and systems, materials and mechanical engineering. The following professional degrees are offered as well: Master of Aerospace Engineering, Master of Chemical Engineering, Master of Civil Engineering, Master of Electrical Engineering, Master of Industrial and Systems Engineering, Master of Materials Engineering and Master of Mechanical Engineering. The M.S. in textile science is a joint program coordinated through the Department of Textile Engineering and Consumer Affairs. The M.S. requires a minimum of 45 quarter hours, including a formal written thesis and one quarter of full-time residency. A minimum of 45 to 48 quarter hours is required under the professional degree program. Additional requirements vary from program to program. For further information, see the *Graduate School Bulletin*.

Cooperative Education — The Cooperative Education Program is offered in all curricula of the College of Engineering. Refer to the program and write to the Director, Cooperative Education, Auburn University, AL 36849, for a booklet which gives additional information.

Extension — The Engineering Extension Service extends the resources of the College of Engineering to the people, businesses and industries of the state. Programs in this service are technical assistance, short courses, conferences, workshops and seminars. For more information, contact: Director, Engineering Extension Service, 217 Ramsay Hall, Auburn University, AL 36849.

Videotape-Based Off-Campus Courses — The College of Engineering offers graduate-level courses for credit and non-credit to off-campus students through its Graduate Outreach Program. Graduate-level courses are videotaped in the classroom on the Auburn campus and mailed to off-campus students on the same day. Students enrolled in the program are required to do the same homework assignments and take the same exams as the on-campus students enrolled in the course. For information on admission to the program, fees, course offerings and other particulars, write to the Graduate Outreach Program, 202 Ramsay Hall, Auburn University, AL 36849 or call (334) 844-5300.

Pre-Engineering

Scholastic Requirements — Pre-Engineering students are transferred to the curriculum of their choice in the College of Engineering upon meeting the following requirements:

1. Complete all appropriate freshman courses;
2. Earn an overall GPA on all required and approved elective course work as follows: 2.5 for Chemical Engineering; 2.0 for Textile Management and Technology; 2.2 for all other curricula.
3. Recommendation by the Curriculum Admissions Committee.

A student who has not met the above criteria after six resident quarters is dropped from the College of Engineering. Junior standing will not be granted to any student in the Pre-Engineering Program.

Academic standing — The College of Engineering's academic standing policy for those students who have completed their pre-engineering requirements and are classified in their engineering curricula is as follows:

1. Engineering students will be placed on engineering academic warning whenever their quarterly GPA is less than a 2.0.
2. If, during the next quarter in residence, a student on engineering academic warning does not earn a 2.0 quarterly GPA, that student will be placed on engineering academic probation.
3. If, during the next quarter in residence a student on engineering academic probation does not earn a 2.0 cumulative GPA, that student will be automatically withdrawn from the College of Engineering with the notation, "Dropped from College of Engineering" placed on their record.
4. Students who are dropped under the above provisions are eligible for consideration for admission to other curricula outside the College of Engineering, provided they meet the general scholastic requirements for continuance in the university. The student should check with the registrar to determine his or her academic status.

Degree Requirements — To earn the bachelor's degree in the College of Engineering, students must complete the subjects in the curriculum, have a minimum GPA of 2.0 in all work attempted at Auburn University and have a cumulative GPA of 2.0 on courses passed in the major at Auburn. The major is defined as all course work with the departmental prefix in the student's curriculum, that is, for an electrical engineering student, all courses with the EE prefix are considered to be in the major. It is the student's responsibility to keep informed of course requirements and scheduling. Failure to do so may jeopardize graduation.

Military Science — All curricula in the College of Engineering permit the use of some basic and advanced ROTC courses passed at Auburn University. For these options, see the specific curriculum. Twelve ROTC course credits are approved for all engineering curricula by the College of Engineering only for those ROTC students who are enrolled in, and complete a 12-quarter AU ROTC program. For those students who do not complete a 12-quarter AU ROTC program, course credit will be determined on an individual basis. ROTC courses cannot be substituted for any ABET required courses.

The Pre-Engineering curriculum shown below is uniform for Civil, Computer Engineering and Computer Science, Industrial, Materials and Mechanical Engineering. Aerospace, Chemical, Electrical and Textile Engineering has separate freshman year requirements.

Curriculum in Pre-Engineering (PN)

First Quarter			FRESHMAN YEAR			Third Quarter		
			Second Quarter					
MH	161 An. Geom. & Cal.	5	MH	162 An. Geom. & Cal.	5	MH	163 An. Geom. & Cal.	5
CH	103 Fund. Chem. I	4	CH	104 Fund. Chem. II	4	PS	220 Gen. Physics I	3
CH	103L Gen. Chem. Lab.	1	CH	104L Gen. Chem. Lab.	1	PS	220L Gen. Physics Lab. I	1
CSE	120 Intro. Engr. Comp.	3	EH	110 English Comp.	5	PA	102 Intro. to Ethics	5
Core History (p. 16)		3	Core History (p. 16)		3	Core History (p. 16)		3

Department of Aerospace Engineering

Aerospace engineers are concerned with the application of scientific principles and engineering concepts and practices to design, build, test and operate aerospace systems. The aerospace engineering curriculum is intended to provide students with a broad understanding of fundamental scientific and technological principles, and to develop the ability to use these principles in developing solutions to engineering problems.

The objectives of the aerospace engineering program are: (1) to help students develop written and oral communication skills and to acquire a knowledge of history, literature and society; (2) to provide students a solid foundation in and a sound working knowledge of basic engineering principles; (3) to help students obtain an understanding of the engineering principles and skills specifically needed in the aeronautical and astronautical disciplines; and (4) to assist and encourage each student to develop an enhanced ability to learn and think creatively.

Required courses cover aeronautical and astronautical subjects. Students may also choose to emphasize either aeronautical or astronautical systems. Technical electives allow concentration in such areas as aerodynamics, astronautics, flight dynamics and control, propulsion, structures and structural dynamics. Senior design courses draw on the knowledge gained during the first three years of study and provide an understanding of the methods used in designing aerospace vehicles and systems, as well as, with experience working on goal-oriented design teams.

Graduates of the aerospace engineering curriculum should be able to contribute effectively on a professional level in a wide of positions within industry and government. They should have a good appreciation for professional development and research. Those graduates who have done exceptionally well academically should have the option of continued study at an advanced level.

Curriculum in Aerospace Engineering (AE)

FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
MH 151 An. Geom. & Cal.	5	MH 162 An. Geom. & Cal.	5	MH 163 An. Geom. & Cal.	5
CH 103 Fund. Chem. I	4	EH 110 English Comp.	5	PS 220 Gen. Physics I	3
CH 103L Gen. Chem. Lab.	1	U 102 Polit. Economy	3	PS 220L Gen. Physics Lab. I	1
CSE 120 Intro. Engr. Comp.	3	Core History (p. 16)	3	PA 102 Intro. to Ethics	5
Core History (p. 16)	3			Core History (p. 16)	3

SOPHOMORE YEAR

First Quarter		Second Quarter		Third Quarter	
MH 264 An. Geom. & Calc.	5	EH 220 Great Books I	5	AE 226 Aerospace Dynamics	5
EGR 205 Engr. Mech. Statics	3	PS 222 Gen. Physics III	3	EGR 201 Thermodynamics	3
PS 221 Gen. Physics II	3	PS 222L Gen. Physics Lab III	1	AE 307 Aerosp. Structures I	4
PS 221L Gen. Phys. Lab. II	1	MH 265 Lin. Diff. Equat.	3	MH 266 Topics in Linear Alg.	3
AE 201 Intro. AE	3	EGR 207 Mech. of Mtls.	3	EE 307 Intro. to EE I	3
U 101 Soc., Cult. & Env.	3	AE 202 Aerosp. Comp. Meth.	2		

JUNIOR YEAR

AE 300 Aerodynamics	5	AE 339 Static Stab. & Control	4	AE 415 Jet Propulsion	5
AE 311 Aerosp. Mtls.	3	AE 332 Astrodynamics I	3	AE 400 Viscous Aerodyn.	3
AE 334 Aerosp. Syst. Anal.	3	AE 301 Compressible Flow	3	AE 308 Theor. Aerodynamics	3
MH 362 Engr. Math.	3	EH 221 Great Books II	5	EH 404 Tech. Writing	5
Core Fine Arts (p. 16)	3	AE 306 Aerodynamics Lab	2		

SENIOR YEAR

AE 447 Aerosp. Design I	3	AE 448 Aerosp. Design II	3	AE 449 Aerosp. Des. III	3
AE 409 Aerosp. Struct. II	4	AE 521 Flight Veh. Stress Anal.	3	AE 529 Vibration & Flutter	3
AE 533 Astrodynamics II	3	AE 541 Dyn. Stab. & Cntl.	3	U 103 Indiv. & Society	3
Tech. Elective or ROTC	3	Tech. Elective	3	Tech. Elective	3
Free Elective or ROTC	3	Free Elective	3	Free Elective	3

TOTAL — 196 QUARTER HOURS

Aviation Management

The Aviation Management curriculum provides a technical management background and specialization in aviation leading to careers with airlines, aircraft manufacturers, airports and many other segments of the aviation industry. Information regarding awards, scholarships, internships and aviation management student organizations is available through the program coordinator.

AREAS OF CONCENTRATED STUDY

Concentrations within the basic program are Professional Flight Management, Airway Science Management and Management in Aircraft System.

Individuals interested in registering in any of the foregoing major fields are advised to contact the Program Coordinator, Aviation Management in the Department of Aerospace Engineering as soon as that decision is made so proper counseling and classification can be provided.

Curriculum in Basic Aviation Management (AMN)

FRESHMAN YEAR			Third Quarter		
First Quarter			Second Quarter		
MH 160 Pre-Calculus	5	MH 161 Anal. Calculus	5	AM 200 Aerosp. Prob.	3
EH 110 Eng. Comp.	5	PA 219 Bus. Ethics	5	PG 201 Psychology	5
HY 121 Tech. & Civ.	3	HY 122 Tech. & Civ.	3	HY 123 Tech. & Civ.	3
AM 101 Intr. to Aviation	3	COM 100 Speech	3	U 101 Soc., Cult. & Env.	3
SOPHOMORE YEAR			JUNIOR YEAR		
AM 201 Elem. Aerosp.	3	AM 220 Statistics	3	EH 221 Great Books II	5
AM 207 Intr. Comp.	3	PS 206 Phy. II & Lab	5	AC 215 Fund. Acct.	5
PS 205 Phy. I & Lab	5	EH 220 Great Books I	5	Core Fine Arts (p. 16)	3
MT 255 Leg. Envir. Bus.	4	U 103 Indiv. & Society	3	Free Elective	3
U 102 Political Economy	3	SENIOR YEAR			
EC 301 Econ. Prin.	5	AM 309 Prop. & Sys. I	4	AM 310 Prop. & Sys. II	4
AM 305 Aviation Met.	5	AM 320 Econ. Anal.	5	AM 314 Oper. Prob.	5
MN 310 Prin. Mgt.	5	FI 361 Prin. Finance	5	MT 372 Prin. Transp.	5
AM 405 Aviation Safety	3	Prof. Elective or ROTC	3	AM 416 Air Transp. I	3
MT 331 Prin. Mkt.	5	PG 359 Indus. Psych.	5	AM 401 Aerosp. Seminar	1
AM 403 Gen. Av. Mgt.	3	AM 417L Simulation	2	AM 409 Aerosp. Law & Ins.	3
AM 417 Air Transp. II	3	MN 342 Hum. Res. Mgt.	5	MN 443 Labor Relations	5
EH 404 Tech. Writing	5	AM 413 Airport Mgt.	3	Prof. Elective	6

TOTAL — 194 QUARTER HOURS

Professional Electives must be approved by the academic advisor.

Six hours advanced ROTC may be used in lieu of COM 100 (3 hours) and Professional Elective (3 hours). Basic ROTC may be used in lieu of six hours of Professional Electives.

Professional Flight Management

Requires flight education and training through either Certificated Flight Instructor rating or Multi-Engine rating. The major develops competence in flight in preparation for a flight operation career with the airlines; a corporation flight department, a flight instructor. Special fee required for the flight training courses.

Curriculum in Professional Flight (AMF)

FRESHMAN YEAR			Third Quarter		
First Quarter			Second Quarter		
MH 160 Pre-Calculus	5	MH 161 Anal. Calculus	5	AM 200 Aerosp. Prob.	3
EH 110 Eng. Comp.	5	PA 219 Bus. Ethics	5	PG 201 Psychology	5
HY 121 Tech. & Civ. (p. 16)	3	HY 122 Tech. & Civ. (p. 16)	3	HY 123 Tech. & Civ. (p. 16)	3
AM 101 Intr. to Aviation	3	COM 100 Speech	3	U 101 Soc., Cult. & Env.	3
SOPHOMORE YEAR			JUNIOR YEAR		
AM 207 Intr. Comp.	3	AM 220 Statistics	3	MT 255 Leg. Environ. Bus.	4
AM 216 Prin. of Flight II	3	PS 206 Phy. II & Lab	5	AC 215 Fund. Acct.	5
PS 205 Phy. I & Lab	5	EH 220 Great Books I	5	EH 221 Great Books II	5
AM 217 Pvt. Flt. Trng. I	1	AM 218 Pvt. Flt. Trng. II	1	AM 322 Com. Flt. Trng. I	1
U 102 Political Economy	3	U 103 Indiv. & Society	3	Free Elective	3
EC 301 Econ. Prin.	5	AM 309 Prop. & Sys. I	4	AM 310 Prop. & Sys. II	4
AM 323 Com. Ops. & Perf.	4	AM 320 Econ. Anal.	5	AM 314 Ops. Prob.	5
AM 324 Comm. Flt. Trng. II	1	AM 325 Prin. Inst. Flt.	5	AM 416 Air Transp.	3
MN 310 Prin. Mgt.	5	AM 326 Comm. Flt. Trng. III	1	AM 327 Comm. Flt. Trng. IV	1
AM 405 Aviation Safety	3	SENIOR YEAR			
AM 403 Gen. Av. Mgt.	3	AM 413 Airport Mgt.	3	AM 401 Aerosp. Seminar	1
AM 417 Air Transp. II	3	PG 359 Indus. Psych.	5	AM 409 Aerosp. Law & Ins.	3
FI 361 Prin. Finance	5	AM 417L Simulation	2	Prof. Elective	9
AM 429 Flt. Instr. Trng.	1	MN 342 Hum. Res. Mgt.	5	Core Fine Arts (p. 16)	3
EH 404 Tech. Writing	5	TOTAL — 196 QUARTER HOURS			

All Professional Electives must be approved by the academic advisor.

Six hours advanced ROTC may be used in lieu of COM 100 (3 hours) and Professional Elective (3 hours). Basic ROTC may be used in lieu of six hours of Professional Electives.

Airway Science Management

Follows an approved selection of professional electives prescribed by the Federal Aviation Administration for a career in air traffic control.

Curriculum in Airway Science (AMA)

FRESHMAN YEAR

First Quarter			Second Quarter			Third Quarter		
MH	160 Pre-Calculus	5	MH	161 Anal. Calculus	5	AM	200 Aerosp. Prob.	3
EH	110 Eng. Comp.	5	PA	219 Bus. Ethics	5	PG	201 Psychology	5
HY	121 Tech. & Civ. (p. 16)	3	HY	122 Tech. & Civ. (p. 16)	3	HY	123 Tech. & Civ. (p. 16)	3
AM	101 Intr. to Aviation	3	COM	100 Speech	3	U	101 Soc., Cult. & Env.	3

SOPHOMORE YEAR

AM	201 Elem. Aerosp.	3	AM	220 Statistics	3	AC	215 Fund. Acct.	5
AM	207 Basic Prog.	3	PS	206 Phy. II & Lab	5	EH	221 Great Books II	5
PS	205 Phy. I & Lab	5	EH	220 Great Books I	5	Core	Fine Arts (p. 16)	3
MT	255 Leg. Envir. Bus.	3	U	103 Indiv. & Society	3	Free	Elective	3
U	102 Political Economy	4						

JUNIOR YEAR

EC	301 Econ. Prin.	5	AM	309 Prop. & Sys. I	4	AM	310 Prop. & Sys. II	4
AM	305 Aviation Met.	5	AM	320 Econ. Anal.	5	AM	314 Oper. Prob.	5
MN	310 Prin. Mgt.	5	MT	342 Hum Res. Mgt.	5	MT	331 Prin. Mkt.	5
AM	405 Aviation Safety	3	Prof.	Elective	3	AM	416 Air. Transp. I	3

SENIOR YEAR

EH	404 Tech. Writing	5	PG	359 Indus. Psych.	5	AM	401 Aerosp. Seminar	1
AM	403 Gen. Av. Mgt.	3	AM	417L Simulation	2	AM	409 Aerosp. Law & Ins.	3
AM	417 Air Transp. II	3	MN	346 Org. Behavior	5	MN	443 Labor Relations	5
Prof.	Elective	6	AM	413 Airport Mgt.	3	AM	419 Air Tfc. Cont. & Lab	5

TOTAL — 194 QUARTER HOURS

Professional Electives may be approved by the academic advisor.

Six hours advanced ROTC may be used in lieu of COM 100 (3 hours) and Professional Elective (3 hours). Basic ROTC may be used in lieu of six hours of Professional Electives.

Aircraft Systems Management

Established and approved by the Federal Aviation Administration to provide for a career as a Flight Safety Inspector. Special fees required for flight training courses.

Curriculum in Aircraft Systems (AMS)

FRESHMAN YEAR

First Quarter			Second Quarter			Third Quarter		
MH	160 Pre-Calculus	5	MH	161 Anal. Calculus	5	AM	200 Aerosp. Prob.	3
EH	110 Eng. Comp.	5	PA	219 Bus. Ethics	5	PG	201 Psychology	5
HY	121 Tech. & Civ. (p. 16)	3	HY	122 Tech. & Civ. (p. 16)	3	HY	123 Tech. & Civ. (p. 16)	3
AM	101 Intr. to Aviation	3	COM	100 Speech	3	U	101 Soc., Cult. & Env.	3
						AM	215 Prin. of Fit. I	3

SOPHOMORE YEAR

AM	216 Prin. of Fit. II	3	AM	220 Statistics	3	AM	322 Com. Fit. Trng. I	1
AM	207 Intr. Comp.	3	PS	206 Phy. II & Lab	5	AC	215 Fund. Acct.	5
PS	205 Phy. I & Lab	5	EH	220 Great Books I	5	EH	221 Great Books II	5
MT	255 Leg. Envir. Bus.	4	AM	217 Priv. Fit. Trng. II	1	Free	Elective	3
AM	217 Priv. Fit. Trng. I	1	U	102 Political Economy	3	U	103 Indiv. & Society	3

JUNIOR YEAR

EC	301 Econ. Prin.	5	AM	309 Prop. & Sys. I	4	AM	310 Prop. & Sys. II	4
AM	323 Com. Ops. & Perf.	4	AM	320 Econ. Anal.	5	AM	314 Oper. Prob.	5
MN	310 Prin. Mgt.	5	AM	325 Prin. of Inst. Fit.	5	AM	327 Comm. Fit. Trng. IV	1
AM	324 Comm. Fit. Trng. II	1	AM	326 Comm. Fit. Trng. III	1	AM	416 Air. Transp. I	3
			Core	Fine Arts (p. 16)	3	AM	428 Prin. Fit. Instr.	3

SENIOR YEAR

AM	403 Gen. Av. Mgt.	3	PG	359 Indus. Psych.	5	AM	401 Aerosp. Seminar	1
AM	417 Air Transp. II	3	AM	417L Simulation	2	AM	409 Aerosp. Law & Ins.	3
FI	361 Prin. Finance	5	AM	435 Inst. Fit. Instr. Trng.	2	AM	437 Multi-Engine Instr.	2
AM	429 Fit. Instr. Trng.	1	AM	413 Airport Mgt.	3	Prof.	Elective	9
AM	427 Multi-Engine Trng.	2	EHA	404 Tech. Writing	5			
AM	405 Aviation Safety	3						

TOTAL — 197 QUARTER HOURS

Professional Electives may be approved by the academic advisor.

Six hours advanced ROTC may be used in lieu of COM 100 (3 hours) and Professional Elective (3 hours). Basic ROTC may be used in lieu of six hours of Professional Electives.

SUGGESTED PROFESSIONAL ELECTIVES COURSES OTHER THAN THOSE LISTED BELOW MAY BE USED

AS PROFESSIONAL ELECTIVES ONLY UPON APPROVAL BY THE PROGRAM COORDINATOR

AVIATION MANAGEMENT: All Except AM 304. COMMUNICATION: COM 311, 340, 480. ECONOMICS: EC 340, 350, 433, All 500-level courses. ENGLISH: EH 400, 416. HISTORY: HY 307, 308, 309. MANAGEMENT: MN 305, 307, 380, 381, 382, 385, 386, 410, 420, 421. All 500-level courses. MARKETING: MT 344, 336, 341, 372, 432, 436, 440, 474, 475, 476, 477. CIVIL ENGINEERING: CE 201, 350, 450, 452, 542, 556. ACCOUNTING: AC 213, All 300-level, 410. FINANCE: FI 320, 323, 362, 363, 421, 451. GEOGRAPHY: GY 102, 302, 401, 507.

Department of Agricultural Engineering

The Department of Agricultural Engineering offers programs in agricultural engineering and in forest engineering.

Agricultural Engineering students receive academic training that addresses the engineering of biosystems and natural resource systems. The goal of the program is to produce engineers grounded in basic engineering principles and the principles and processes involved in biosystems, natural resources and related industries. The degree program teaches students to solve engineering problems by investigating key aspects of a system and by identifying and understanding the interrelation of separate components. The program contains a strong foundation of engineering courses common to all engineering programs, including courses in mathematics, physics, computer applications and the engineering sciences. Building on these fundamentals, a broad spectrum of required courses in engineering, plant and animal sciences, biological sciences and natural resources address engineering problems found in biosystems. Students are introduced to the process of engineering design early in required agricultural engineering courses. Each agricultural engineering course incorporates design fundamentals specific to the topics being taught. This broad educational experience is then focused on a real-world engineering problem in the two-quarter senior design experience, in which the student is part of a design team that develops a solution to an engineering design problem presented by a cooperating industrial partner. Through this capstone design experience, the student is able to bring together many aspects of their engineering education in solving a real-world problem. The agricultural engineering graduate is thus well-equipped to solve engineering problems in the interface between the physical and biological world.

Careers for graduates include design, development, consulting, management, sales, testing, construction, research and other functions that engineers fulfill. They find positions in environmental management and protection, machine development, irrigation and water management, natural resource conservation, process engineering, structural design and computer and automatic control system applications. They work in their own firms or for manufacturers, consultants, governmental agencies and processors. Graduates can also pursue advanced degrees in engineering, agriculture, business, science, law and other fields.

Curriculum in Agricultural Engineering (AN)

FRESHMAN YEAR			
First Quarter		Second Quarter	
MH 161 An. Geom. & Calc.	5	MH 162 An. Geom. & Calc.	5
CH 103 Fund. Chem. I	4	CH 104 Fund. Chem. II	4
CH 103L Gen. Chem. Lab	1	CH 104L Gen. Chem. Lab	1
CSE 120 Intr. Engr. Comp.	3	EH 110 Eng. Comp.	5
HY 121 or 101 (p. 16)	3	HY 122 or 102 (p. 16)	3
ROTC or Free Elective	1	ROTC or Elective	1
SOPHOMORE YEAR			
MH 264 An. Geom. & Calc.	5	MH 265 Diff. Equations	3
PS 221 Gen. Phys. II	3	PS 222 Gen. Phys. III	3
PS 221L Gen. Phys. Lab II	1	PS 222L Gen. Phys. Lab	1
AN 201 Engr. Prin. Biosyst.	5	EGR 207 Mech. of Mtls.	3
EGR 205 Engr. Mech. Stat.	3	BI 101 Prin. Biol.	5
ROTC or Free Elective	1	ROTC or Elective	1
JUNIOR YEAR			
CE 310 Hydraulics I	3	AN 311 Mob. Eqpt. Des. Fnd.	4
EE 302 Intr. EE I	3	AN 315 Proc. Engr. Biosys.	5
AY 307 Gen. Soils	5	EE 303 Intr. EE II	3
EH 221 Great Books II	5	EH 404 Tech. Writing	5
SENIOR YEAR			
AN 403 App. Strct. An. & Des.	3	AN 430 Engr. Biosys. I	4
ISE 360 Engr. Econ. Anal.	3	AN 414 Irrigation Syst. Des.	3
AN 418 Waste Mgt. Util. Sys.	4	Anim./Plant Sci. Elective	5
AN 509 Hydraulic Cntl. Syst.	4	U 102 Polit Econ.	3
U 101 Soc., Cult. & Env.	3		
TOTAL — 207 QUARTER HOURS			

Forest Engineering

Forest Engineering students receive academic training that addresses the engineering of forest systems, natural resources and related manufacturing industries. The goal of the program is to produce engineers grounded in basic and applied principles in engineering, forestry, natural resources and biosystems. The degree program is designed to teach students to solve problems

by considering engineering, as well as, biological aspects of natural resource systems. This problem-solving approach uses a foundation of engineering courses common to all engineering programs, including mathematics, physics, computer applications and the engineering sciences. To emphasize a systems approach, the program also contains a strong foundation in forestry and includes courses in forest biology, forest measurements, surveying, forest economics and forest management. The student builds on these fundamentals by completing additional required courses in engineering and forestry. Developing practical solutions to real-world problems is the focus throughout the program. In the senior year two-quarter senior design experience, the student is part of a design team that develops a solution to an engineering problem presented by a cooperating industrial partner. The forest engineering graduate is thus well-equipped to solve real-world engineering problems in forestry and related sectors of our economy.

Careers for graduates include design, development, consulting, management, sales, testing, construction and research. They work in their own firms or find positions in forest operations management, forest and land management, environmental management and protection, machine development, process engineering, structural design and natural resource conservation. Graduates also pursue advanced degrees in engineering, forestry, business, science, law and other fields.

Curriculum in Forest Engineering (FYE)

FRESHMAN YEAR		
First Quarter	Second Quarter	Third Quarter
MH 161 An. Geom. & Cal. 5	MH 162 An. Geom. & Cal. 5	MH 163 An. Geom. & Cal. 5
CH 103 Fund. Chem. & Lab. 4	EH 110 Eng. Comp. 5	PS 220 Gen. Physics I 3
CH 103L Gen. Chem. Lab. 1	Core Fine Arts (p. 16) 3	PS 220L Gen. Phys. Lab I 1
CSE 120 Intro. Engr. Comp. 3	HY 122 or 102 3	PA 102 or 219 5
HY 121 or 101 3	ROTC or Free Elective 1	HY 123 or 103 3
ROTC or Free Elective 1		ROTC or Free Elective 1
SOPHOMORE YEAR		
MH 264 An. Geom. & Cal. 5	MH 265 Diff. Equat. 3	CE 303 Civil Engr. Stat. 4
PS 221 Gen. Physics II 3	PS 222 Gen. Physics III 3	EGR 201 Thermodynamics I 3
PS 221L Gen. Phys. Lab. II 1	PS 222L Gen. Phys. Lab. III 1	EGR 235 Dynamics 3
FYE 201 Egr. Prin. in For. Sys. 5	EGR 207 Mech. of Solids 3	EH 220 Great Books I 5
EGR 205 Appl. Mech. Stat. 3	BI 101 Prin. of Biology 5	ROTC or Free Elective 1
ROTC or Free Elective 1	ROTC or Free Elective 1	
SUMMER FIELD PRACTICUM		
	FYE 300 Intro. Forest Oper. 2	
	FY 302 Intro. Forest Biol. 2	
	FYE 304 Forest Surveying 5	
	FY 305 Field Mensuration 4	
	FY 306 Intro. Forest Mgt. 2	
JUNIOR YEAR		
EE 302 Intr. Elec. Engr. I 3	FYE 311 Mob. Equip. Des. Fund. 4	FYE 401 For. Mach. Des. 3
FY 318 Forest Meas. I 4	CE 430 Intr. Soil Mechanics 4	FYE 313 Ld. & Wtr. Cns. Eng. 3
CE 310 Hydraulics I 3	FY 319 Forest Meas. II 5	EH 221 Great Books II 5
U 101 Soc. & Culture 3	FYE 315 Proc. Engr. For. Sys. 5	Technical Elective 3
FY 310 Dendrology 4		
SENIOR YEAR		
FYE 403 App. Struct. An. & Des. 3	FYE 430 Egr. Des. For. Syst. I 4	FYE 530 Egr. For. Syst. II 4
FYE 509 Hydr. Cont. Sys. 4	FYE 402 For. Transp. Syst. Des. 3	FYE 572 Engr. For. Hv. Sys. 4
U 102 Political Economy 3	Engineering Elective 4	U 103 Indiv. in Society 3
EH 404 Tech. Writing 5	FY 540 Forest Economics 4	Technical Elective 3

TOTAL — 210 QUARTER HOURS

Six hours of Advanced ROTC may be substituted from six hours of Technical Electives.

Department of Chemical Engineering

Chemical engineering at Auburn provides program specializations in Biochemical Engineering, Computer-aided Control, Energy Engineering, Environmental Chemical Engineering, Pre-Medicine in Chemical Engineering and Pulp and Paper Engineering. Through the general program and these specializations, graduates have attractive opportunities in process engineering (chemical, pulp and paper, plastics, pharmaceuticals and biochemicals), engineering, professional and consulting services (environmental, process design/control, technical service, marketing, research and development). Students are also prepared for graduate study in chemical engineering, medicine, business and law.

Chemical engineering builds on a thorough grounding in chemistry obtained from general, organic and physical chemistry and other advanced chemistry topics appropriate to the program specialization. Fundamental and specific math, science and engineering topics are selected to

provide a strong core chemical engineering background and the needs of each program specialization. Each chemical engineering graduate has a strong working knowledge of the core chemical engineering topics including material and energy balances applied to chemical processes, thermodynamics of physical and chemical equilibria, heat, mass and momentum transfer, chemical reaction engineering, continuous and stagewise separation operations, process dynamics and control. The design experience is interwoven throughout the curriculum from elementary design principles in material and energy balances using modern computing methods to the capstone senior process design and process control sequence employing advanced computer process and control simulators and experimental control systems.

The specific curriculum goals are designed to enable each graduate to model or simulate chemical and physical processes, design and conduct experiments, analyze and interpret chemical engineering data, design and determine capital costs for chemical and physical processes, perform mass and energy balances, understand professional and ethical responsibility, communicate (written and orally) technical information, effectively apply modern computing and experimental chemical engineering tools, be economically, socially, environmentally and safety conscious and demonstrate the skills learned in the classroom and laboratory.

Curriculum in Chemical Engineering (CHE)

FRESHMAN YEAR			Third Quarter		
First Quarter			Second Quarter		
CH 111 or CH 103	5	CH 112 or CH 104	5	CH 113 or CH 105	5
MH 161 An. Geom. & Calc.	5	MH 162 An. Geom. & Calc.	5	MH 163 An. Geom. & Calc.	5
U 101 Soc., Cult. & Env.	3	EH 110 Eng. Comp.	5	PS 220 Gen. Physics	4
Core History (p. 16)	3	Core History (p. 16)	3	Core History (p. 16)	3
SOPHOMORE YEAR					
CHE 210 Principles of CHE	4	EGR 201 Thermo. I	3	CHE 211 CHE Thermodyn. I	4
MH 264 An. Geom. & Calc.	5	CHE 361 Transport I	4	CHE 213 Comp. in CHE	3
EH 220 Great Books I	5	EH 221 Great Books II	5	CHE 362 Transport II	4
PS 222 Gen. Physics	4	MH 265 Diff. Equations	3	EE 307 Intro. EE I	3
CHE 201 Intro. CHE	1	COM 100 or ROTC	3	U 102 Polit Econ.	3
JUNIOR YEAR					
CHE 337 Thermo. II	4	CHE 366 Unit Oper. I	3	CHE 363 Transport III	4
CHE 382 CHE Lab I	3	CHE 367 Fund. Solid Oper.	3	CHE 365 CHE Analysis	3
CH 207 Org. Chem.	5	CH 208 Organic Chem.	5	CHE 370 Reaction Engr.	4
CHE 515 Comp. App. CHE	3	EH 404 Tech. Writing	5	CHE 486 CHE Lab II	3
U 103 Indiv. & Society	3	Engr. Sci. Elect. ³	3	Free Elective or ROTC	3
SENIOR YEAR					
CHE 444 Proc. Des. Pract.	2	CHE 447 Comp. Proc. Des.	3	CHE 518 Proc. Dyn & Cnf. Lab	2
CHE 516 Proc. Dyn. & Cont.	4	CHE 517 Dig. Proc. Cont.	4	CHE 565 Hazard Mat. Mgt.	4
CHE 545 Proc. Econ. & Des.	3	CH 508 Physical Chem.	5	CHE Sci./Des. Elect. or ROTC ³	3
CHE 546 Comp. Proc. Sim.	4	Core Fine Arts (p. 16)	3	CH Adv. Chem. Elect. ³	4
CH 507 Phys. Chem.	5			PA 219 Bus. Ethics	5

TOTAL — 210 QUARTER HOURS

¹ One course selected from CH 209, 509, 510, 513, 518, FP 478, CHE 560.

² Three hours selected from EE 308, 309, ISE 330, 331, MTL 220.

³ Three hours selected from CHE 409, 412, 450, 479, 487, 499, 550, 595 or other suitable elective.

Biochemical Specialization in Chemical Engineering

Chemical engineers trained in biochemical engineering and biotechnology are the key to successful commercialization of new biologically based processes ranging from high value pharmaceuticals to new food processes. This program specialization provides a strong biology and chemistry fundamental background for graduate work in biochemical engineering and a plan of study to meet these objectives.

Students in the Biochemical Specialization will be responsible for the following five courses (20 credit hours): BI 101, MB 300, CHE 595, Elective (3) and CHE 518, which will replace EGR and Science Elective, CHE 565, CHE Sci./Des. Elective, Advanced Chemistry, Free Elective and COM 100 (oral and written communication are strong components of CHE 382, 444, 447, 486, 518, 545 and 546).

Any deviation from the above requires approval of the department head.

Computer Control Specialization in Chemical Engineering

Chemical engineers with expertise in the application of computer-aided process control, computer-aided process systems and advanced instrumentation are highly sought after by all process industries. The program specialization provides appropriate courses for an individual with interests in computer control.

Students in the Computer Control Specialization will be responsible for the following courses (16 credit hours): EE 301, CH 513, Computer Control Electives (5) and Elective (3) (electives selected from EE 351, 362, CSE 200, 220, 350, CHE 450, 479, 499 are suggested). The required courses listed will replace CHE Sci./Des. Elective, Free Elective, Egr. Sci. Elective, Advanced Chemistry Elective and COM 100 (oral and written communication are strong components in CHE 382, 444, 447, 486, 518, 545 and 546).

Any deviation from the above requires approval of the department head.

Energy and Fuels Engineering Program Specialization

Chemical engineers form the technical manpower backbone of the energy industry (petroleum, coal, natural gas, solar, etc.) and efficient use of energy is exceedingly important in all industries. This program specialization provides for individuals with interests in energy (either resources, conversion, efficiency and/or conservation).

Students in the Energy and Fuels Specialization will be responsible for the following courses (16 credit hours): CHE 412, CH 513, Energy/Fuel Electives (5) and Elective (3) (electives selected from PS 520, ME 520, 525, 526, GL 315, 641, EE 381, BS 351, CHE 401 or 402 are suggested). These courses will replace Egr. Sci. Elective, Free Elective, CHE Sci./Des/ Elective, Advanced Chem. Elective and COM 100 (oral and written communication are strong components in CHE 382, 444, 447, 486, 518, 545 and 546).

Any deviation from the above requires approval of the department head.

Environmental Specialization in Chemical Engineering

The environmental specialization in chemical engineering prepares students for careers in the expanding environmental arena. Students specializing in this area learn about the chemical processes and reactions which affect the environment and the latest governmental regulations pertaining to air, water and land quality, as well as, hazardous materials management. This specialization prepares students for environmental positions in a broad range of manufacturing and service industries all of which must comply with increasingly strict and complex environmental regulations, and in various state and federal agencies.

Students in the Environmental Specialization will be responsible for the following four courses (17 credit hours): CE 421, 524, CE 513, Elective (3) (either CE 528, CHE 595 or other suitable environmental courses are suggested). These courses will replace Egr. Sci. Elective, Free Elective, CHE Sci./Des/ Elective, Advanced Chem. Elective, CHE 101 and COM 100 (oral and written communication are strong components in CHE 382, 444, 447, 486, 518, 545 and 546).

Any deviation from the above requires approval of the department head.

Pre-Medicine Specialization in Chemical Engineering

This specialization is for students planning professional careers in medicine, dentistry or biomedical engineering. The program is highly regarded by medical and dentistry schools admissions committees. Auburn chemical engineers with satisfactory GPAs have been favorable accepted by medical and dental schools. This specialization also provides the necessary preparation for students wanting to do graduate work in biomedical engineering and, when completed, provides a regular chemical engineering degree while simultaneously meeting pre-medicine requirements.

Students in the Pre-Medicine Specialization are responsible for the following seven courses (29 credit hours): BI 101, 103, Elective (3), ZY 310, PA 218, CH 209 and PS 221. These courses will replace CHE 565, Egr. Sci. Elective, Free Elective, CHE 101, CHE Sci./Des/ Elective, CHE 367, PA 219, Advanced Chem. Elective and COM 100 (oral and written communication are strong components in CHE 382, 444, 447, 486, 518, 545 and 546).

Students in this program specialization must be advised by the Pre-Health Professions Advisor. Any deviation from the above requires approval of the department head.

Pulp and Paper Chemical Engineering Program Specialization

This specialization prepares students for challenging and rewarding technical careers in the pulp and paper and numerous allied industries, which service the paper industry. The industry is capable of sustainable development with a renewable raw material base, recyclable products and processing technology able to achieve energy self-sufficiency and environmental compatibility. Entry-level positions for students successfully completing this specialization include process engineering, project engineering, environmental engineering, product development, technical service, sales and marketing.

Students in the Pulp and Paper Specialization are responsible for the following eight courses (27 credit hours): CHE 409, 410, 412, 457, 510, 556, FP 478, Elective (3). These courses will replace CHE 101, 565, Egr. Sci. Elective, Free Elective, CHE 447, CHE Sci./Des. Elective, CHE 546, Advanced Chem. Elective and COM 100 (oral and written communication are strong components in CHE 382, 444, 447, 486, 518, 545 and 546).

Any deviation from the above requires approval of the department head.

Department of Civil Engineering

Civil Engineers conceive, plan, construct and operate facilities and systems that meet basic human needs and reach out toward the realization of society's most noble goals. Buildings, bridges, pipelines, highways, railways, airports, launching pads, harbors, dams, power plants and water and waste treatment facilities are but a few of the creations of civil engineers. Employment opportunities abound for civil engineers, who hold important positions in both the public and private sectors of the economy and who often move into upper-level management. Civil engineers interact with the public far more often than other kinds of engineers and often see the results of their work benefit society directly.

The fundamental instructional mission of the department is to prepare students for ethical practice of civil engineering. The broad-based and professionally-oriented curriculum emphasizes the application of science and mathematics to the solution of engineering problems, encourages the development of communication skills, fosters an appreciation for culture and the natural world, affirms the necessity of maintaining the highest ethical standards, stresses the responsibility for protection of the public interest and public health and safety and provides a sound basis for maintaining and enhancing professional competence through life-long learning.

The first two years focus on basic principles, which are applied in the last two years in required and elective courses in major specialty areas including construction methods and materials, soil mechanics, highway transportation, hydraulics, structure and environmental engineering. Engineering science and design are integrated throughout, with the design emphasis shifting from the introduction of fundamental concepts, principles and tools in the early courses to application to increasingly realistic situations. The design experience culminates in the capstone senior design project.

Graduates are prepared for a variety of entry-level civil engineering positions. By giving careful attention to the selection of technical and design electives and the senior design project, students may choose to emphasize a technical specialty area.

Curriculum in Civil Engineering (CE)

FRESHMAN YEAR

(See Pre-Engineering Curriculum)

SOPHOMORE YEAR

Second Quarter

MH 264 An. & Calculus	5	MH 265 Diff Equations	3	EGR 207 Mech. of Solids	3
PS 221 Physics II	3	PS 222 Physics III	3	EGR 201 Thermodynamics I	3
PS 221L Physics Lab	1	PS 222L Physics Lab	1	CE 206 CE Mechanics	3
EGR 172 Graph. Com. Des.	3	EH 220 Great Books I	5	EH 221 Great Books II	5
CE 200 Intr. to CE	1	EGR 205 Statics	3	CE 301 Analysis	3
CE 202 CE Comp. Appl.	3	CE 201 Surveying	3		

JUNIOR YEAR

EGR 235 Dynamics	3	CE 300 Engr. Sci. Appl.	1	EH 404 Tech. Writing	5
GL 315 Engr. Geology	4	CE 303 Statistics	4	CE 320 Urban Hyd. Des.	3
ISE 360 Engr. Econ.	3	CE 311 Hydraulics II	3	CE 350 Highway Engr. I	3
CE 310 Hydraulics I	3	EE 302 Intro. to EE	3	CE 420 Water Treat.	3
CE 360 Structures I	4	CE 465 Steel Design I	3	CE 430 Intr. Soil Mech.	4
		CE 382 CE Materials	4	CE 311L Hydraulics Lab	1

SENIOR YEAR

U 101 Soc., Cult. & Env.	3	U 102 Polit Econ.	3	U 103 Indiv. & Society	3
CE 421 Waste Treat.	4	COM 100 Prof. Comm.	3	EC 301 Ec. Pr./Bus. Pol.	3 or 6
CE 431 Soil & Fnd. Engr.	3	Tech. Elective	3	MN 310 Prin. of Management	5
CE 460 Concrete Des. I	3	Core Fine Arts (p. 16)	3	CE 401 Prof. Practice	1
CE 441 Intro. to Construction	3	Design Elective	3	CE Sr. Design Project	5
				Tech. Elective	3

TOTAL — 204 QUARTER HOURS

A total of 12 hours ROTC credit may be substituted for a Technical Elective, CE 200 and either EC 301 or MN 310. Technical and Design Electives must be selected from an approved course list. The Senior Design Project must be selected from an approved course list.

TECHNICAL AND DESIGN ELECTIVES

A list of suggested technical and design electives may be obtained in the departmental office. Any course not on the list must be approved by the head of the department. Electives may be selected to emphasize construction management, environmental engineering, geotechnical engineering, hydraulics and hydrology (ground and surface water), pavement materials, structural engineering and transportation engineering.

CONSTRUCTION ENGINEERING – CE 542, 544, 582, 583. ENVIRONMENTAL ENGINEERING – CE 422, 423, 520, 521, 523, 524, 528. GEOTECHNICAL ENGINEERING – CE 530, 531, 532, 538. HYDRAULICS/HYDROLOGY AND GROUNDWATER ENGINEERING – CE 412, 511, 513, 515, 516, 518. PAVEMENT MATERIALS ENGINEERING – CE 584, 585, 587, 589. STRUCTURAL ENGINEERING – CE 491, 560, 562, 565, 569, 570. TRANSPORTATION ENGINEERING – CE 450, 452, 454, 550, 551, 553, 554, 556, 558.

Environmental Science

Environmental Science, administered by the College of Engineering, is an interdepartmental program based on strengths in engineering and the biological and physical sciences.

Environmental science specialists are employed by industries, consultants, trade associations and governmental agencies to work in areas such as hazardous materials management, environmental impact assessment, water supply, refuse and wastewater control, air pollution control, radiation health physics, industrial hygiene, institution sanitation, food sanitation, industrial safety, public health, and local, national and global ecology.

The program leading to a Bachelor of Science degree is designed to prepare graduates for careers in the broad field of environmental science. Students desiring to incorporate an engineering or computer science base into this program are strongly encouraged to do so.

Curriculum in Environmental Science (ENS)

First Quarter			FRESHMAN YEAR			Third Quarter		
			Second Quarter					
CH 103 Chemistry I	4		CH 104 Chemistry II	4		CH 105 Chemistry III	4	
CH 103L Chemistry I Lab	1		CH 104L Chemistry II Lab	1		CH 105L Chemistry III Lab	1	
MH 160 Pre-Cal. w/Trig.	5		MH 161 Ag. & Calculus	5		BI 101 Prin. Biol.	5	
EH 110 Eng. Comp. I	5		Core Fine Arts (p. 16)	3		EH 220 Great Books I	5	
Core History (p. 16)	3		Core History (p. 16)	3		Core History (p. 16)	3	
SOPHOMORE YEAR								
BI 107 Environ. Biology	5		U 101 Soc., Cult. & Env.	3		AM 304 Meteorology	5	
PS 205 Physics I	3		PS 206 Physics II	3		PS 207 Physics III	3	
PS 205L Physics I Lab	1		PS 206L Physics II Lab	1		PS 207L Physics III Lab	1	
EH 221 Great Books II	5		CH 203 Org. Chem.	5		CH 305 Anal. Chemistry	3	
ZY 205 Wildlife Cons.	3		PA 102 Intr. to Ethics	5		CH 305L Anal. Chem. Lab	2	
						AEC 210 Microcomputers	3	
JUNIOR YEAR								
PO 327 Policy Process	5		FY 344 Environ. Law	4		AY 304 Gen. Soils	5	
BI 103 Animal Biol.	5		COM 100 Prof. Comm.	3		ADS 321 Anim. Biochem.	5	
MB 300 Gen. Microbiol.	5		U 102 Political Economy	3		NFS 318 Nutr. Biochem.	5	
CSE 120 Computers	3		ZY 306 Ecology	5		CE 523 Env. Hlth. Engr.	3	
			Free Elective or ROTC	3		EH 404 Tech. Writing	5	
SENIOR YEAR								
DMS 215 Bio. Stat.	5		MB 541 Environ. Micro.	5		RSY 362 Comm. Org.	4	
ISE 503 Occup. Safety	3		CE 524 Air Pollution	5		CE 527 Fnd Wat/Waste Tr.	5	
U 103 Indiv. & Society	3		CE 521 Env. Engr. Chem. II	3		Approved Prof. Elect. (see dept.)	4	
CE 520 Env. Egr. Chem. I	3		CE 521L Env. Egr. Ch. Lab II	1		Free Elective or ROTC	3	
CE 520L Env. Egr. Ch. Lab	1		Approved Prof. Elect. (see dept.)	3				
Free Elective or ROTC	3							

TOTAL — 208 QUARTER HOURS

CE 523 and 527 are writing reinforcement courses.

A total of 12 hours of ROTC credit may be substituted for COM 100 and the Free Electives.

Geological Engineering

The curriculum in geological engineering, administered by the Department of Civil Engineering in the College of Engineering, is an interdisciplinary curriculum conducted cooperatively by the Civil Engineering Department and Geology Department in the College of Sciences and Mathematics and is monitored by a faculty Geological Engineering Curriculum Committee.

The program consists of 203 quarter hours representing 12 regular academic quarters and one regular summer session during which students are required to take Geological Field Methods and Geological Mapping (eight credit hours, summers only), a part of the engineering design requirement for ABET accreditation. The curriculum consists of the general freshman requirements of the College of Engineering, rigorous mathematics and chemistry through organic chemistry (CH 207) and a complete complement of basic engineering and geology courses.

The program's objective is to produce graduates who will be able to pass the Fundamentals of Engineering (FE) test, and ultimately, the test for registration as a professional engi-

neer and/or the test for professional registration as a geologist. Students will also be well prepared for advanced degree programs in engineering or geology. The curriculum will emphasize the physics, chemistry, biology, hydrology and geology of the near-surface portions of the crust which are the major portions involved with geotechnical, water supply, groundwater contamination and waste disposal problems. Subjects related to mining and mineral engineering are not emphasized.

Curriculum in Geological Engineering (GE) *

FRESHMAN YEAR
(See Pre-Engineering Curriculum)

CH 105 Chemistry	4	CH 207 Org. Chem.	4	GL 315 Engr. Geology	4
CH 105L Chem. Lab	1	MH 265 Diff Equations	3	EGR 201 Thermo. I	3
MH 264 An. & Calculus	5	PS 222 Physics	3	CE 301 Civil Engr. Analysis	3
PS 221 Physics	3	PS 222L Physics Lab	1	EH 220 Great Books I	5
PS 221L Physics Lab	1	EGR 205 Statics	3	EGR 207 Mech. Solids	3
		CE 202 Computer	3		

JUNIOR YEAR

EH 221 Great Books II	5	CE 303 Statistics	4	GL 240 Struct. Geol.	5
ISE 360 Engr. Econ.	3	CE 311 Hydraulics II	3	CE 412 Hydrology	3
EE 302 Circuits	3	CE 311L Hydraulics Lab	1	CE 430 Intro. to Soils	4
CE 310 Hydraulics I	3	GL 302 Optical Miner.	5	U 101 Soc., Cult. & Env.	3
GL 301 Mineralogy	5	EH 404 Tech. Writing	5		

SUMMER QUARTER/JUNIOR YEAR

GL 215 Geol. Field Methods	6
GL 231 Indep. Geol. Mapping	2

SENIOR YEAR

CE 515 Subsurf. Hydro.	3	CE 516 Subsur. Meas.	3	U 103 Indiv. & Society	3
U 102 Political Economy	3	COM 100 or ROTC	3	Core Fine Arts (p. 16)	3
CE 431 Soil & Found.	3	GL 520 Gmdwfr. Geochem.	3	Free Elective	3
GL 401 Sed. Petrology	5	GL 411 Stratigraphy	5		
Tech. Elective or ROTC	3	Technical Elective or ROTC	3		

TOTAL — 203 QUARTER HOURS

* There are recommended elective sequences in Business Administration, Environmental Engineering, Geotechnical, Groundwater Modeling, Soil Science, Structures and Urban Hydrology. Technical Electives must be selected from an approved course list.

Department of Computer Science and Engineering

Computer Science — The Computer Science curriculum, leading to the Bachelor of Science in Computer Science, combines a general foundation in science, mathematics, social sciences and humanities and the fundamentals of computer science with advanced work in the theoretical bases for computation, design and analysis of algorithms and software development methodologies. It is intended to prepare students for a range of careers in software design, analysis and development, as well as for graduate study. Course work in computer science includes hands-on exposure to a variety of computer systems, tools and techniques. The curriculum meets general Auburn University requirements and has been accredited by the Computer Science Accreditation Commission (CSAC) of the Computer Sciences Accreditation Board, Inc.

Curriculum in Computer Science (CS)

FRESHMAN YEAR
(See Pre-Engineering Curriculum)

SOPHOMORE YEAR

First Quarter		Second Quarter		Third Quarter	
CSE 200 Fund. Comp. Sci. I	4	CSE 220 Fund. Comp. Sci. II	4	CSE 350 Sys. Prog. w/ C	3
PS 222 Gen. Physics III	3	PS 221 Gen. Physics II	3	EE 330 A&D Logic Cir.	4
PS 222L Gen. Physics III Lab.	1	PS 221L Gen. Physics II Lab.	1	EH 221 Great Books II	5
U 101 Soc., Cult. & Env.	3	U 102 Political Economy	3	U 103 Indiv. & Society	3
MH 264 An. Geom. & Cal.	5	EH 220 Great Books I	5		
		MH 266 Lin. Algebra	3		

JUNIOR YEAR

CSE 360 Fund. Algorithms	3	CSE 432 Intro. Comp. Networks	3	CSE 405 Oper. Syst.	3
CSE 422 Intr. Sftw. Engr.	3	COM 100 or ROTC	3	CSE 405L Oper. Syst. Lab	1
EE 335 Comp. O&A.Prg.	3	ISE 331 Prob. for Engr.	3	CSE 412 Database Sys. I	3
Concentration *	5	Concentration *	5	EH 404 Tech. Writing	5
CSE 324 Discrete Struct.	3	Tech. Elective or ROTC	3	Concentration *	5

College of Engineering

SENIOR YEAR

CSE 520 Thy. Form. Lang. 3	CSE 530 Des. Comp. Arch. 3	CSE 521 Compiler Const. 3
CSE 518 Prog. Lang. Conc. 3	CSE 560 Artificial Intel. 4	CSE 521L Com. Const. Lab. 1
Concentration * 5	Concentration * 5	CSE 527 D&A of Alg. 3
CSE Approved Elective 3	CSE Approved Elective 3	CSE Approved Elective 3
Free Elective or ROTC 3		Tech. Elective or ROTC 3
		Core Fine Arts (p. 16) 3

TOTAL — 200 QUARTER HOURS

* Concentration must be approved by CSE Department Director of Undergraduate Studies.

Computer Engineering — The goal of the Computer Engineering curriculum is to provide a broad background of fundamental engineering principles and to develop skills in applying these principles to the design and implementation of complex computer systems. A degree program which balances computer theory with practical applications and software design methodologies with fundamentals of hardware interfaces prepares students for professional careers or graduate study. The curriculum is based on a strong core of topics including software engineering, networks, computer architecture and computer system design. Through a sequence of advanced elective courses, the plan of study also allows students to specialize with further emphasis in areas of the core and to broaden their background with additional subjects. The curriculum further enriches each student's general education with a range of courses from science, mathematics, the humanities and the social sciences.

Engineering design theory and methodology, as they apply to the creation of reliable and efficient software, form an integral component of the curriculum, beginning with the first course in structured program development and culminating in the comprehensive senior design project. In many courses, these principles are reinforced through hands-on laboratory experience in which students apply design methodology to the solution of a variety of practical problems.

Curriculum in Computer Engineering (CPE)

FRESHMAN YEAR

(Same as Pre-Engineering Curriculum)

SOPHOMORE YEAR

First Quarter

CSE 200 Fund. Comp. Sci. I 4
PS 222 Gen. Physics III 3
PS 222L Gen. Physics III Lab. 1
MH 264 An. Geom. & Calc. 5
EH 220 Great Books I 5

Second Quarter

CSE 220 Fund. Comp. Sci. II 4
PS 221 Gen. Physics II 3
PS 221L Gen. Physics II Lab. 1
EE 261 Lin. Cir. Anal. I 3
EH 221 Great Books II 5
MH 265 Lin. Diff Equations 3

Third Quarter

CSE 350 Sys. Prog. w/ C 3
EE 330 A&D Logic Cir. 4
MH 266 Lin. Algebra 3
EE 263 Lin. Cir. An. II 4
EE 264 Lin. Cir. An. II Lab. 1

JUNIOR YEAR

CSE 360 Fund. Algorithms 3
CSE 422 Intr. Sftw. Engr. 3
EE 335 Comp. O&A Prg. 3
U 101 Soc., Cult. & Env. 3
EH 404 Tech. Writing 5

CSE 432 Intro. Comp. Networks 3
Free Elective or ROTC 3
EE 371 Electronics I 4
U 102 Political Economy 3
EGR 205 Engr. Mech. Stat. 3

CSE 405 Oper. Syst. 3
CSE 405L Oper. Sys. Lab. 1
U 103 Indiv. & Society 3
Free Elective or ROTC 3
Core Fine Arts (p. 16) 3
EE 430 Comp. Sys. Des. 4

SENIOR YEAR

CSE 520 Thy. Form. Lang. 3
EE 530 Comp. Arch. & Des. 4
ISE 360 or ROTC 3
CSE Approved Elective 3
EGR 201 Thermodynamics I or
EGR 235 Dynamics I 3

CSE Arch. Elective * 3
CSE 560 Artificial Intel. 4
CSE 571 Design Project 3
CSE Approved Elective 3
ISE 331 Prob. for Engr. 3

CSE 521 Compiler Const. 3
CSE 521L Com. Const. Lab. 1
CSE 572 Des. Project 2
CSE Approved Elective 3
CSE 412 Database Sys. I 3
Tech. Elective or ROTC 3

TOTAL — 200 QUARTER HOURS

* Selected from approved list obtained from the CSE undergraduate counselor.

Department of Electrical Engineering

The Electrical Engineering curriculum produces well-educated graduates prepared to practice engineering at a professional level in an era of rapid and challenging technological development. The goal of the professional portion of the curriculum is to emphasize basic areas of study while providing the flexibility to accommodate a diversity of interests and talents. To this end, the curriculum emphasizes hands-on laboratory experience, knowledgeable use of digital computer systems, oral and written communication skills, the importance of business, economic, social and global forces on engineering and the maintenance of professional competence through continued self-improvement after graduation.

The curriculum builds upon a solid foundation in mathematics and science. Electrical engineering topics are introduced early and the carefully coordinated to provide the principles for

the practice of electrical engineering. The design experience is interwoven throughout the curriculum by introducing basic design concepts early, emphasizing design experiences in the laboratories and culminating with a capstone design project in the senior year. The senior year elective structure provides students with the flexibility to pursue a range of career options.

Curriculum in Electrical Engineering (EE)

FRESHMAN YEAR		
First Quarter		
MH 161 An. Geom. & Cal.	5	
CH 103 Fund. Chem. I	4	
CH 103L Gen. Chem. Lab.	1	
U 101 Soc., Cult. & Env.	3	
Core History (p. 16)	3	
Second Quarter		
MH 162 An. Geom. & Cal.	5	
EH 110 English Comp.	5	
U 102 Political Economy	3	
Core History (p. 16)	3	
Third Quarter		
MH 163 An. Geom. & Cal.	5	
PS 220 Gen. Physics I	3	
PS 220L Gen. Physics Lab. I	1	
PA 219 Business Ethics	3	
Core History (p. 16)	3	
SOPHOMORE YEAR		
First Quarter		
MH 264 An. Geom. & Calc.	5	
PS 221 Gen. Physics II	3	
PS 221L Gen. Physics II Lab	1	
EE 211 Elec. Circuits I	3	
EE 200 Comp. Methods in EE	3	
EE 201 EE Lab I	1	
Second Quarter		
MH 265 Lin. Diff. Equations	3	
PS 222 Gen. Physics III	3	
PS 222L Gen. Physics III Lab	1	
EE 212 Elec. Circuits II	3	
EE 221 Digital Systems	3	
EE 202 EE Lab II	1	
COM 100 Prof. Com.	3	
Third Quarter		
MH 266 Lin. Algebra	3	
EGR 210 Fund. of Engr. Mech.	3	
EE 314 Signals & Systems I	3	
EE 222 Computer Systems	3	
EE 203 EE Lab III	1	
U 103 Indiv. & Society	3	
JUNIOR YEAR		
First Quarter		
EE 315 Signals & Systems II	3	
EE 331 Electromagnetics I	3	
EE 304 EE Lab IV	1	
EE 375 Electronics I	3	
ISE 360 Engr. Econ. An.	3	
EGR 220 Intro. Th. Fids. & Heal	3	
Second Quarter		
EE 311 Prob. Mth. for EE	3	
EE 332 Electromagnetics II	3	
EE 305 EE Lab V	1	
EE 375 Electronics II	3	
EE 380 Elec. Power Engr.	3	
Free Elective	3	
Third Quarter		
EE 350 Control Systems	3	
EE 345 Communication Sys.	3	
EE 306 EE Lab VI	1	
EH 220 Great Books I	5	
Math/Science Elective *	5	
SENIOR YEAR		
First Quarter		
EH 221 Great Books II	5	
EE 401 Sr. Design Projects	3	
Free Elective	3	
EE Elective (see dept. guidelines)	3	
Second Quarter		
EH 404 Tech. Writing	5	
EE 402 Sr. Design Projects	3	
Free Elective	3	
EE Elective (see dept. guidelines)	3	
EE Elective (see dept. guidelines)	3	
Third Quarter		
Core Fine Arts (p. 16)	3	
Free Elective	3	
Free Elective	3	
EE Elective (see dept. guidelines)	3	
EE Elective (see dept. guidelines)	3	

TOTAL — 193 QUARTER HOURS

* Must be selected from offerings of the College of Science and Mathematics.

Basic ROTC may be substituted for COM 100 and three hours of Free Electives. Advanced ROTC may be substituted for ISE 360 and three hours of Technical Electives.

Department of Industrial and Systems Engineering

The Industrial and Systems Engineering (ISE) curriculum draws on specialized skills in the mathematical, physical and social sciences to develop a student's ability to deal with economic, technical and human performance considerations in design, analysis and control of industrial and service systems.

The curriculum provides a solid core of courses in systems analysis and design along with courses in ergonomics and economic analysis. Design experience is integrated throughout the curriculum starting in the sophomore year and culminates in a two-quarter senior design project in which students apply their knowledge to the solution of real-world problems. Technical and departmental engineering elective courses provide flexibility in the program. Students can pursue a general industrial and systems engineering curriculum or specialize in engineering management, ergonomics and safety, operations research and engineering statistics or production and manufacturing systems. Technical electives allow students to select from courses in engineering, computer science, mathematics, business or interdepartmental courses in the environmental sciences. Alternatively, students can use these electives to obtain a concentration in one or two of these areas.

The degree provides graduates with broad and flexible career opportunities with industrial, consulting, service or governmental organizations. The degree can also provide the foundation and background for further studies in engineering, business, law or medicine.

The goals of the ISE curriculum at Auburn are to: (1) provide a fundamental education in industrial and systems engineering to prepare students for professional practice or for graduate studies in industrial and systems engineering and related fields. This fundamental education includes course work in engineering economy, engineering statistics, ergonomics and safety, manufacturing, operations planning, operations research and quality control; (2) use case studies, real-world projects and open-ended homework problems to develop engineer-

ing design abilities. Integrate design experiences throughout the curriculum and culminate these experiences in a two-quarter capstone design sequence; (3) involve students in group activities and exercises to develop teamwork and leadership skills; (4) require written reports and oral presentations to develop written and oral communication skills.

Curriculum in Industrial and Systems Engineering (ISE)

FRESHMAN YEAR (See Pre-Engineering Curriculum)									
SOPHOMORE YEAR									
First Quarter					Second Quarter				
MH	264 An. Geom. & Calc.	5	ISE	331 Prob. for Engr.	3	ISE	332 Engr. Stat. I	3	
PS	221 Gen. Physics II	3	EH	221 Great Books II	5	ISE	302 Occ. Ergo. & Saf.	5	
PS	221L Gen. Phys. Lab II	1	PS	222 Gen. Physics III	3	MH	266 Lin. Algebra	3	
ISE	310 Indus. & Systs. Engr.	3	PS	222L Gen. Physics Lab III	1		Free Elective or ROTC	3	
EH	220 Great Books I	5	MH	265 Lin. Diff. Equations	3	U	101 Soc., Cult. & Env.	3	
JUNIOR YEAR									
ISE	333 Engr. Stat. II	3	ISE	360 Engr. Econ. An.	3	ISE	390 Seminar in ISE	1	
ISE	341 Oper. Res. I	3	ISE	343 Oper. Res. II	3	ISE	422 Oper. Plann. I	3	
EGR	205 Engr. Mech. Stat.	3	EGR	207 Mech. of Mtls.	3	EH	404 Tech. Writing	5	
U	102 Political Economy	3	EE	302 Intr. to EE I	3	ISE	380 Mfg. Engr. I	4	
Tech. Elect. or ROTC (see dept.)		3	U	103 Indiv. & Society	3		Engr. Elective *	3	
SENIOR YEAR									
ISE	402 Methods Engr.	3	ISE	497 Sr. Des. Proj. I	3	ISE	498 Sr. Des. Proj. II	3	
ISE	456 Simulation	3	ISE	482 Manf. Sys. Des.	3	ISE	Elective	6	
ISE	Elective **	3	ISE	Elective	3		Technical Electives	3	
ISE	433 Stat. Qual. Cont.	3	Tech. Elect. or ROTC (see dept.)		6		Core Fine Arts (p. 16)	3	
ISE	425 Oper. Plann. II	3							

TOTAL — 191 QUARTER HOURS

TECHNICAL ELECTIVES

* Engineering electives are to be selected from EGR 201, 235, EE 332 or MTL 220.

** ISE electives are to include four courses from at least two of the following groups:

GROUP 1 - ENGINEERING MANAGEMENT: ISE 529, 534, 545, 560. **GROUP 2 - ERGONOMICS AND SAFETY:** ISE 501, 502, 504. **GROUP 3 - OPERATIONS RESEARCH AND ENGINEERING STATISTICS:** ISE 533, 536, 538, 541, 547, 551. **GROUP 4 - PRODUCTION AND MANUFACTURING:** ISE 523, 525, 533, 534.

Engineering Management Specialization

This specialization is designed for students with ultimate career goals in technical management or marketing. Many employers desire graduates with engineering backgrounds for technical marketing and management trainee positions. This specialization permits students to obtain additional technical courses related to engineering management and engineering economics. Students can also use their technical electives to take courses from the College of Business in accounting, finance, management and marketing. ISE 545 and 560 replace six hours of ISE electives. The remaining six hours of ISE electives are to include one elective from group 1 and one from groups 2, 3 or 4.

Ergonomics and Safety Specialization

The Occupational Safety and Ergonomics (OS&E) specialization provides skills to: (1) recognize, evaluate and control hazards that could injure people in the workplace; (2) evaluate and design physical work environments to optimally utilize the capabilities of people while minimizing job-related stress. Environments designed to minimize physical hazards to employees while optimally using their capabilities have a direct and positive impact on product quality, organizational efficiency, cost performance and employee morale. Engineers with specific skills in safety engineering and ergonomics are able to make significant contributions to the design of appropriate work environments and are actively sought by a variety of companies. This specialization requires ISE 501 and 504 in lieu of six hours of ISE electives. The remaining two courses of ISE electives can be taken from any of the four groups. Students are encouraged to select ISE 502 as one of the two remaining courses.

Operations Research and Engineering Statistics Specialization

Industrial engineers in this specialization are employed in manufacturing, government/military and service sectors. They are problem solvers who aid in forecasting, resource allocation, scheduling, routing, supply chain logistics, quality assurance and control, design of experiments and data analysis. Typical positions would be as engineer/analyst for the government, military, banking, insurance, securities, airlines, railroads, trucking, retail or manufacturing. The Labor Bureau (DOT 020.067-018) predicts job opportunities in operations research and engineering statistics to grow much faster than the average for all occupations through the year 2005. This specialization

requires ISE 533 and 551 in lieu of six hours of ISE electives. The remaining six hours of ISE electives are to include one elective from group 3 and one from groups 1, 2 or 4.

Production and Manufacturing Systems Specialization

Engineers with expertise in production and manufacturing systems are a vital part of designing, controlling and managing production and distribution systems in virtually every industry. Their understanding of how these systems work together to deliver goods and services makes them invaluable both as engineers and managers. Students who pursue this specialization typically have careers in consulting, corporate-level and facility-level engineering and management. This specialization is suited for students with interests in manufacturing system operation and design, facility design, production planning and control, warehousing and inventory management. It requires ISE 523 and 525 in lieu of six hours of ISE electives. The remaining six hours of ISE electives are to include one elective from group 4 and one from groups 1, 2 or 3.

Department of Mechanical Engineering

Mechanical Engineering is a fundamental discipline with applications in almost every engineering field. Mechanical engineers improve productivity in many industrial processes and create new technologies to meet growing demands. Graduates of this program may find employment in a variety of industries, such as automotive, aircraft, ship, steel, pulp and paper, power generation, steel production, oil refineries, heating and cooling, refrigeration, transportation, biotechnology (artificial organs) and research and development.

The curriculum stresses design via innovative courses. It has been developed to prepare the student through high-quality internationally-recognized instructional programs to practice engineering professionally and ethically in a competitive global environment. The basic engineering fields of mechanics, materials science, thermodynamics, fluid mechanics and heat transfer are covered in depth, giving students a thorough background to equip them for the complex problems they will face in industry. Specialized courses are offered in combustion engines, power plants, air conditioning, refrigeration, gas turbines, turbo machinery and automatic controls. Starting from the sophomore year, students are introduced to design methodology in courses which integrate concepts developed in other courses in the curriculum. The design sequence begins with the introduction of fundamentals of the design process, concepts, ethics and manufacturing capabilities, followed by the study of machine elements leading to their incorporation into comprehensive machinery design. Subsequently, concepts in thermal design and controls are introduced to gain extensive design experience in an environment simulating industrial settings. The design sequence culminates in two capstone courses in the senior year emphasizing teamwork in creative design, analysis and synthesis. The coordinated design experience in the curriculum facilitates the student's effective transition to industry.

Curriculum in Mechanical Engineering (ME)

FRESHMAN YEAR (See Pre-Engineering Curriculum)

SOPHOMORE YEAR

First Quarter			Second Quarter			Third Quarter		
MH	264 An. Geom. & Calc.	5	ME	232 Dynamics	5	MH	362 Engr. Math.	3
PS	221 Gen. Physics II	3	ME	260 Con. in Engr. Des.	2	EE	307 Intr. to EE I	3
PS	221L Gen. Physics Lab.	1	ME	231 Comp. Aid. Engr.	3	EH	220 Great Books I	5
ROTC	or Free Elective	3	ME	233 Mech. of Matl.	4	EGR	201 Thermodynamics I	3
MTL	220 Maths. & Prop. I	3	MH	265 Lin. Diff. Equations	3	ME	280 Des. for Mfg.	3
EGR	205 Engr. Mech. Stat.	3						

JUNIOR YEAR

EE	308 Intr. to EE II	3	ME	301 Thermodynamics II	5	ME	303 Heat Transfer II	3
ME	340 Fluid Mech. I	3	ME	341 Fluid Mechanics II	3	ME	305 Des. of Ther. Sys.	3
ISE	360 Engr. Ec. Anal.	3	ROTC	or Free Elective	3	EH	221 Great Books II	5
MH	266 Topics in Linear Alg.	3	ME	361 Des. of Mech. Sys.	4	ME	300 Measurement Lab	2
ME	360 Des. of Mach. Elem.	4	ME	302 Heat Transfer I	3	ME	362 Dyn. of Phy. Sys.	3

SENIOR YEAR

EH	404 Tech. Writing	5	ME	401 Comp. ME Des. I	3	ME	402 Comp. ME Des. II	3
ME	460 Des. Contr. Mech. Sys.	4		500-Level ME Elective	3		ROTC or Free Elective	3
	500-Level ME Elective	3		Core Fine Arts (p. 16)	3		500-Level ME Elective	3
U	101 Soc., Cult. & Env.	3		ROTC or Free Elective	3	U	103 Indiv. & Society	3
				U 102 Political Economy	3			

TOTAL — 195 QUARTER HOURS

Materials Engineering

The curriculum in Materials Engineering (MTL), administered by the Department of Mechanical Engineering, is structured to address problems associated with the design of materials and materials processes to meet specific needs. The objective of the undergraduate MTL program is to produce professionally qualified materials engineering graduates for the metals, plastics, ceramic and related industries. Emphasis is on the basic sciences and principles of engineering with applications of these principles to materials behavior. The student must obtain a broad foundation in chemistry, physics, mathematics and communication skills. First-year students take the prescribed courses for all first-year engineering students. Technical electives may be chosen from any 300-level or higher course in engineering, chemistry, physics or mathematics. Graduates will be prepared to meet the needs of industry and/or continue their studies towards an advanced degree.

The current curriculum includes a spectrum of advanced undergraduate-level courses designed to provide in-depth applications of the principles of science and engineering to metallic, polymeric and ceramic materials. The engineering sciences and design are integrated throughout the materials courses beginning in the sophomore year and culminating in a comprehensive senior design course. Materials design includes the structure of each type of material and the influence of this structure on the properties and performance in service. Emphasis is on design and laboratory content. Through laboratories, undergraduate research and the final senior project, engineering principles are translated into practice.

Curriculum in Materials Engineering (MTL)

FRESHMAN YEAR (See Pre-Engineering Curriculum)			
SOPHOMORE YEAR			
First Quarter		Second Quarter	
MH 264 An. Geom. & Calc.	5	PS 221 Gen. Physics II	3
PS 222 Gen. Physics III	3	PS 221L Gen. Physics Lab II	1
PS 222L Gen. Physics Lab. III	1	MTL 220 Mtls. & Prop. I	3
EGR 205 Engr. Mech. Stat.	3	ROTC or Free Elective	2
MTL 210 Struct. of Mtls.	3	EH 220 Great Books I	5
ROTC or Free Elective	2	MH 265 Lin. Diff. Equations	3
JUNIOR YEAR			
EGR 201 Thermodynamics I	3	CH 207 or 507	5
MTL 338 Phase Diagrams	3	MTL 447 Mech. Engr. Mtls.	3
EE 307 Intr. to EE I	3	EH 404 Tech. Writing	5
MTL 336 Phys. Anal. of Mtls. I	4	U 102 Polit Econ.	3
U 101 Soc., Cult. & Env.	3		
SENIOR YEAR			
MTL 448 Intr. Ceramics	3	MTL 514 X-ray Lab	3
MTL 513 Intr. X-ray Cryst.	3	MTL 575 Rate Proc. in Mtls.	3
MTL 515 Polymer Tech. I	3	MTL 537 Manf. Processes	3
MTL 550 Therm. of Mtls. Sys.	3	MTL 498 Adv. Projects I	2
U 103 Indiv. & Society	3	ROTC or Free Elective	1
		ME 302 Heat Transfer I	3
TOTAL — 196 QUARTER HOURS			
Third Quarter			
MH 266 Top. in Lin. Alg.	3	MTL 320 Mtls. & Prop. II	4
EH 221 Great Books II	5	MTL 221 Great Books II	5
EGR 207 Mech. of Mtls. I	3	EGR 207 Mech. of Mtls. I	3
ROTC or Free Elective	2	ROTC or Free Elective	2
</			

Department of Textile Engineering

Textile Engineering is truly multi-disciplinary. Careers in this field draw on knowledge from the other engineering fields, sciences, economics, business and others. The size and diversity of textiles and allied industries provide careers in manufacturing, research and development, machinery and engineering design, chemicals and dyestuffs, management, sales, technical service and others. The student may also prepare for graduate study. For students who want to plan their education path in conjunction with industrial experience, the Alabama textile industry cooperates with the Department of Textile Engineering through the Cooperative Education Program. In cooperation with the Engineering Experiment Station and other segments of the university, the department serves textiles through the utilization of its facilities. The three program options have these common goals: (1) providing students with education and careers involving the application of engineering and science principles to design, development, manufacturing, testing and processing of fibers, polymers, textiles and apparel; (2) participation of students in theoretical and experimental research projects which apply engineering and science principles to the solution of problems in integrated textile complex. Preparing students for advanced fiber, polymer and textile engineering studies; (3)

maintain, develop and retain high quality, energetic faculty and support staff for the quality of the program and its graduates.

The Department of Textile Engineering offers three curricula to prepare students for careers in the industry.

Textile Chemistry — Students in this curriculum study the chemistry and physics of natural and man-made fibers and the theory and practice of textile dyeing and finishing. It prepares students for graduate work and careers as chemists and dyers in the textile, man-made fibers, dyestuff and other industries allied to textiles.

Textile Engineering — The curriculum in Textile Engineering offers study in basic engineering. It prepares students for a variety of engineering positions in the polymer, fiber, textiles and apparel industries, as well as in other engineering fields where high-performance industrial textiles are produced or used. The applications of technical textiles have spread into aerospace, architecture and construction, filtration, medicine, military and defense, the paper industry, safety and protection, transportation, electronics, agriculture, sports and recreation.

Textile engineering courses teach students the latest engineering and science principles. The design aspect of textile engineering is incorporated in the courses throughout the curriculum starting with the first quarter of the sophomore year. In addition, students reinforce their specific learning skills with a required senior design project which is spread over a year for in-depth research, design and development of specific and real materials, products and processes for the textile industry. Courses present real-world applications without sacrificing conceptual and theoretical bases. The curriculum involves classroom and laboratory work and offers opportunities for extracurricular activities to prepare graduates to meet the demands of a career in the present and future engineering workplace and be able to assume a responsible place of leadership in a complex technological society. The Textile Engineering curriculum is kept up-to-date to meet the challenges of the present and future industry needs.

Textile Management and Technology — This curriculum prepares students for production, administrative and managerial positions in a textile career. In their junior and senior years, students select a technical elective sequence in courses from disciplines such as Consumer Affairs, Economics, Industrial Engineering, Management and Marketing.

Curriculum in Textile Chemistry (TC)

First Quarter			FRESHMAN YEAR			Third Quarter		
			Second Quarter					
CH 111 Gen. Chem.	4		CH 112 Gen. Chem.	4		CH 113 Gen. Chem. Lab	4	
CH 111L Gen. Chem. Lab	1		CH 112L Gen. Chem. Lab	1		CH 113L Gen. Chem. Lab	1	
EH 110 Eng. Comp.	5		PA 102 Intro. to Ethics	5		PS 220 Gen. Phys. I	3	
MH 161 An. Geom. & Calc.	5		MH 162 An. Geom. & Calc.	5		PS 220L Gen. Phys. Lab I	1	
TT 101 Intro. to Tex.	1		TT 102 Surv. Text Ind.	1		MH 163 An. Geom. & Calc.	5	
CSE 100 Intro. PC Appl.	3					TT 103 Text. Careers	1	
						Free Electives or ROTC	3	
			SOPHOMORE YEAR					
CH 207 Org. Chem.	4		CH 208 Org. Chem.	3		CH 209 Org. Chem.	4	
CH 207L Org. Chem. Lab	1		CH 208L Org. Chem. Lab	2		CH 209L Org. Chem. Lab	2	
MH 264 An. Geom. & Calc.	5		MH 265 Lin. Diff. Equations	3		EH 221 Great Books II	5	
PS 221 Gen. Physics II	3		TT 211 Yarn Form Sys. I	5		TT 221 Fab Form Sys.	5	
PS 221L Gen. Physics Lab II	1		EH 220 Great Books I	5				
Free Electives or ROTC	3							
			JUNIOR YEAR					
CH 305 An. Chemistry	3		EH 404 Tech. Writing	5		TMT 322 Non-Conv. Fab. Struc.	2	
CH 305L An. Chemistry Lab	2		TE 340 Tex. Chem. Proc. I	4		TE 341 Tex. Chem. Proc. II	4	
Core History (p. 16)	3		TT 270 Stat. Tex. Proc. Cont.	5		EC 202 or 301	5	
TE 331 Str. & Pr. of Fibers	4		Core History (p. 16)	3		Core History (p. 16)	3	
TE 332L Fibers Lab	2					COM 100 Prof. Com.	3	
Free Electives or ROTC	3							
			SENIOR YEAR					
CH 507 Phys. Chem.	4		CH 508 Phys. Chem.	4		TC 491 Undergrad. Res. II	3	
CH 507L Phys. Chem. Lab	1		CH 508L Phys. Chem. Lab	1		TC 560 Text. Finishes	4	
TT 350L Text. of Tex. Mtl.	4		U 102 Political Economy	3		U 103 Indiv. & Society	3	
U 101 Soc., Cult. & Env.	3		ISE 360 Engr. Econ. Anal.	3		Core Fine Arts (p. 16)	3	
TC 441 Appl. Dye Theory	4		TC 490 Undergrad. Res. I	3		Free Elective or ROTC	3	
			TOTAL — 201 QUARTER HOURS					

Curriculum in Textile Engineering (TE)

FRESHMAN YEAR

First Quarter

MH	161 An. Geom. & Calc.	5
CH	103 Fund. Chem. I	4
CH	103L Gen. Chem. Lab	1
CSE	120 Intro. Engr. Comp.	3
Core History (p. 16)		3

Second Quarter

MH	162 An. Geom. & Calc.	5
CH	104 Fund. Chem. II	4
CH	104L Gen. Chem. Lab	1
EH	110 Eng. Comp.	5
Core History (p. 16)		3

Third Quarter

MH	163 An. Geom. & Calc.	5
PS	220 Gen. Physics I	3
PS	220L Gen. Physics Lab	1
PA	102 Intro. to Ethics	5
Core History (p. 16)		3

SOPHOMORE YEAR

MH	264 An. Geom. & Calc.	5
PS	221 Gen. Physics II	3
PS	221L Gen. Physics Lab II	1
CH	203 Org. Chemistry	5
TE	201 Intro. to TE	3

MH	265 Lin. Diff. Equations	3
PS	222 Gen. Physics III	3
PS	222L Gen. Physics Lab III	1
TE	210 Fiber to Yarn Egr.	5
EH	220 Great Books I	5

Technical Elective *	3
COM 100 Prof. Comm.	3
EGR 205 Engr. Mech. Stat.	3
TE 225 Fab. Des. & Mfg.	5
Free Elective or ROTC	3

JUNIOR YEAR

EGR	235 Dynamics I	3
TE	331 St. & Pr. of Fibers	4
TE	332 Fibers Lab	2
TE	330 Text. Test. & Analysis	4
EGR	220 Fund. Heat & Fluid Sci.	3

TE	340 Tex. Chem. Proc. I	4
TE	360 Mec. Flex. Str.	5
TT	270 St. Text. Proc. & Cnt.	5
U	101 Soc., Cult. & Env.	3

EGR	201 Thermodynamics	3
EH	221 Great Books II	5
TE	341 Tex. Chem. Proc. II	4
TE	355 App. Num. Dsg. in Tex.	3
U	102 Polit Econ.	3

SENIOR YEAR

EC	202 or 301	5
EE	307 Intr. to EE	3
U	103 Indiv. & Society	3
TE	460 Mech. Tex. Man.	4
TE	489 Tex. Engr. Design I	3

ISE	360 Eng. Ec. Anal.	3
TE	450 Tex. Reinf. Mat.	3
TE	425 Engr. Tex. Struc.	3
TE	491 Tex. Engr. Design II	3
Core Fine Arts (p. 16)		3
EE	309 Engr. Instrumentation	3

TE	492 Tex. Engr. Design III	3
Tech. Electives or ROTC		9
EH	404 Technical Writing	5

TOTAL — 204 QUARTER HOURS

To satisfy the technical elective credit in the Textile Engineering curriculum, students may take any combination of the following approved courses, which are listed in groups of recommended career emphases. Taking an emphasis provides some advantage since these can be identified and listed on one's resume. The approved emphases below are limited to a maximum of 12 credit hours toward graduation. **INDUSTRIAL EMPHASIS:** ISE 301, 341, 343, 401, 422, 425, 482. **MATERIALS EMPHASIS:** MTL 210, 220, 320, 336, 337, 420, 515, 537. **COMPUTER SCIENCE EMPHASIS:** CSE 200, 220, 301, 350, 360, 412, 422. **APPAREL PRODUCTION EMPHASIS:** CA 140, 240, 316, 340, 516, 521, 540. **MACHINE DESIGN EMPHASIS:** ME 230, 370, 397, 454, 475, 485. **ENVIRONMENTAL EMPHASIS:** CE 310, 320, 420, 421, 523, 524. **ADVANCED TEXTILES EMPHASIS:** TT 299 - up to 6 credits, TE 409 - up to 10 credits, TMT 322, 480. **ROTC EMPHASIS:** Basic ROTC - 6 credits (must use Free credits), Advanced ROTC - 6 credits. **OTHER APPROVED ELECTIVES:** EE 301, 303, EGR 207, MH 266, 362.

Curriculum in Textile Management and Technology (TMT)

FRESHMAN YEAR

First Quarter

EH	110 Eng. Comp.	5
MH	160 Pre-Calc. w/ Trig.	5
CH	101 Intr. Chem. I	2
CSE	100 Intr. PC Appl.	3
TT	101 Intr. to Tex.	1

Second Quarter

PA	102 Intro. to Ethics	5
MH	161 An. Geom. & Calc.	5
CH	102 Intr. Chem. II	2
CH	103L Gen. Chem. Lab	1
TT	102 Surv. of Text. Ind.	1

Third Quarter

Core History (p. 16)	3
MH 169 Bus. Math/Cal. Appl.	5
CH 104 Fd. of Chem. II	4
CH 104L Gen. Chem. Lab	1
TT 103 Tex. Careers	1

Free Elective or ROTC 3

SOPHOMORE YEAR

EH	220 Great Books I	5
CH	203 Org. Chem.	5
Free Elective		3
Core History (p. 16)		3

TT	211 Yn. Form. Sys. I	5
TT	270 Stat. Tx. P.C.	5
EH	221 Great Books II	5

PS	200 Fd. of Physics	5
TT	221 Fb. Form. Sys.	5
TMT	212 Yn. Form. Sys. II	3
Core History (p. 16)		3

JUNIOR YEAR

AC	215 Fnd. Gen. Cost Acct.	5
EC	202 Econ. II	5
TT	350 Test. of Tex. Matl.	4
U	101 Soc., Cult. & Env.	3

TMT	320 Dv. & An. Fab.	5
TMT	231 Tex. Fibers I	5
TMT	241 D & F of Tex. Matl.	5
U	102 Political Economy	3

EH	404 Tech. Writing	5
TMT	232 Tex. Fib. II	3
TMT	242 Chem. Tech. B, D & F	3
U	103 Indiv. in Soc.	3

SENIOR YEAR

MN	310 Prin. of Mgt.	5
TMT	352 Tx. Qual. Ctr.	3
Tech.	Elective or ROTC	5
TMT	490 Undergrad. Res. I	3

SENIOR YEAR		
MN	314 Intr. MIS	2
Tech. Elective	.....	5
TMT	491 Undergrad. Res. II	3
Tech. Elective or ROTC	.....	3

Tech. Elective (see dept.)	.....
Tech. Elective	.....
TMT 322 Non. Cv. Fab. Struct.	.....
TMT 480 Plt. Op. & Cs.	.....

TOTAL — 196 QUARTER HOURS

See department for approved list of technical electives.
See department for approved EC substitutions.

School of Forestry

EMMETT F. THOMPSON, *Dean*

GEORGE W. BENGTON, *Associate Dean*

THE SCHOOL OF FORESTRY offers educational programs which prepare graduates for employment in a variety of forestry, natural resources and environmental positions. As the nation's major renewable natural resource, forests play a unique role in today's society in terms of enhancing both economic development and environmental quality. The School of Forestry's programs emphasize functions of forest resources and their vital relationships with other natural resources and society's needs.

Curricula

The School of Forestry offers a curriculum leading to the bachelor of science degree in forestry. A curriculum leading to the bachelor of science in forest engineering is offered in conjunction with the College of Engineering. The School also offers an honors program which leads to the Bachelor of Science in Forestry (Honors Program).

The School's goals are to develop excellence in forestry education, research and extension with particular reference to the forests and associated resources of the Southeastern United States. With respect to undergraduate education, this means graduating individuals who have both the necessary skills for initial employment and the breadth and depth of educational background to support continuing career advancement.

The educational programs in forestry and forest engineering (forest resources minor) leading to the Bachelor of Science degree are accredited by the Society of American Foresters (SAF). SAF is the specialized accrediting body recognized by the Council on Postsecondary Accreditation and the U.S. Department of Education as the accrediting agency for forestry education in the United States. The forest engineering curriculum is also accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET).

Admission

Freshman eligibility is determined by the Admissions Office. However, since the requirements for forestry education necessitate high school preparatory work of high intellectual quality and considerable breadth, the following program is recommended as minimum preparation: English (4 units), mathematics (including algebra, geometry, trigonometry and analytic geometry) (4 units), chemistry (1 unit), biology (1 unit), history, literature, social science (2 or 3 units). Physics and foreign language are recommended but not required. Freshmen are admitted to the pre-forestry curriculum.

Transfers from other institutions must apply through the Admissions office. The exact placement of transfer students can be determined only upon review of their transcripts by the School of Forestry. Transfer credit will not normally be allowed for any course with a grade lower than C at another college or university.

Credit toward a degree in the School of Forestry will not be allowed for mathematics, chemistry or physics courses at a lower level than those specified in the curriculum for the degree sought. However, students who are not prepared to take the course prescribed may take lower level courses without degree credit.

Transfer credit for forestry subjects not considered equivalent to those required in the chosen curriculum may be substituted for elective credit. However, duplication of credit will not be allowed. Equivalency of forestry subjects will be determined by the dean's office. Students may also obtain transfer credit on the basis of validating examinations. Arrangements for validating examinations must be made with the Dean of Forestry, and the examinations must be completed before the middle of the second quarter. Transfer credit for courses considered upper division courses at Auburn University will not be accepted from two-year colleges.

The professional curriculum (FY) in forestry begins with the courses in the School of Forestry Summer Field Practicum. Students are admitted to this curriculum once a year during Spring Quarter. To be considered for admission, a student must have completed, or be enrolled in, at least 75 percent of the credits listed in the pre-forestry (PFY) curriculum. These

credits must include all required courses in mathematics, statistics, biology, English, chemistry, physics and computing.

In addition, students admitted to the professional forestry curriculum must have a minimum weighted GPA, computed only on courses that can be used toward the undergraduate forestry degree (applicable courses), of 2.0. The weighting formula used for admission is available from the dean's office. Exceptions to these standards must be recommended by the Faculty Admissions Committee and approved by the Dean of the School of Forestry.

Because admission to the professional forestry curriculum is limited, the number of students admitted may be fewer than the number of qualified applicants. Students who submit completed applications (including transcripts for transfer students) for admission to the Summer Field Practicum by March 15 each year will be ranked, using weighted GPA. Those not selected may reapply in subsequent years.

To remain enrolled in the professional forestry curriculum, students must maintain minimum GPA standards as established by Auburn University.

Students are admitted to the professional Forest Engineering curriculum (FYE) upon successful completion of the Pre-Forest Engineering (PFYE) program in the College of Engineering with a GPA of 2.2 or greater. Forest Engineering majors must meet School of Forestry requirements for admission to the Summer Field Practicum, to include having completed at least 75 percent of the credits listed for their freshman and sophomore years and all courses in mathematics, statistics, English, chemistry, physics, biology and computing.

Students in the FY and FYE curricula attend the Practicum, which is scheduled for the Summer Quarter preceding the junior year and is held at Auburn's Solon Dixon Forestry Education Center near Andalusia.

Forestry

The objectives of the forestry curriculum are to provide: 1) the fundamental knowledge regarding the resources that professional foresters typically manage and the multiple uses of those resources; 2) a general education integrating physical, social and biological sciences to prepare the forester for the role as steward of public and private forest resources; 3) training and skills needed for initial forestry employment, as well as for advancement to higher levels of managerial responsibility. The forestry degree is appropriate for students who seek employment in any aspect of forest land management from industrial lands where timber production is the primary objective to public lands where recreation or environmental protection is often paramount. The curriculum emphasizes biological, ecological and economic considerations in forest management.

The required courses in the junior year are designed to be taken as a block. The work in them is integrated among courses in each quarter and between quarters. Students who fail one or more courses in the fall or winter quarters jeopardize their ability to continue through the junior year. Students need to pay careful attention to the prerequisites of the junior year courses, which are strictly enforced by the School, to successfully complete that part of the forestry program.

Forestry students are required to meet the minimum requirements of at least two concentrations, and students are required to have a minimum of 28 quarter credit hours in concentrations. The approved concentrations are listed below the curriculum model. More information about planning for the concentrations is available at the School of Forestry.

Curriculum in Pre-Forestry (PFY)

FRESHMAN YEAR												
First Quarter				Second Quarter				Third Quarter				
EH	110 Eng. Comp.	5	PS	200 Found. of Phys.	5	CH	103L Gen. Chem. Lab.	1				
BI	101 Prin. Biology	5	BI	102 Plant Biology	5	CH	103 Fund. Chem. I	4				
HY	101 World History	3	MH	161 An. Geom. & Cal.	5	HY	102 World History	3				
Core Fine Arts (p. 16)								U	101 Soc. & Culture	3		
								MH	169 Bus. Math w/Calc.	5		
SOPHOMORE YEAR												
CH	104L Gen. Chem. Lab.	1	HY	103 World History	3	Core Philosophy (p. 16)				5		
CH	104 Fund. Chem. II	4	DMS	215 Bio. Statistics	5	CSE				100 PC Applications	3	
EC	301 Econ. & Bus. Policy	5	EH	221 Great Books II	5	U				103 Indiv. & Society	3	
EH	220 Great Books I	5	U			102 Political Economy	3	AY			305 Gen. Soils	5

Curriculum in Forestry (FY)

SUMMER FIELD PRACTICUM

FY 302 Intro. For. Biol.	2
FY 305 Field Mensuration	4
FYE 304 For. Surveying	5
FYE 300 Intro. For. Oper.	2
FY 306 Intro. For. Mgt.	2

JUNIOR YEAR

FY 320 For. Tree Phys.	3	FY 319 For. Meas. II	5	FY 541 For. Mgt. & Adm.	4
FY 310 Dendrology	4	FY 540 For. Econ.	4	FYE 570 Harvesting	3
FY 318 For. Meas. I	4	FY 323 For. Ecology	3	FY 523 Silviculture	4
Concent./Elective	4	Concent./Elective	3	FY 542 For. Policy	3
				Concent./Elective	2

SENIOR YEAR

Concent./Elective	13	EH 404 Technical Writing	5	FY 590 Seminar	1
FP 339 Intro. Wd. Science	3	Concent./Elective	9	Concent./Elective	10
		FY 444 Fire Cont./Use	2	ENT/PLP 215 For. Pests	4

TOTAL — 202 QUARTER HOURS

CONCENTRATIONS

- Forest Resources** (must pass a minimum of 12 hours from the following): ZY 205, FY 344, 463, 460, 524, 565, 525, FY/ENT 526.
- Forest Operations** (must pass all of the FY and FYE courses and at least 11 of the remaining hours): FYE 370, 571, FP 420, 535, 536, 521, 550, FY 482, 483, CHE 409.
- Forest Products Manufacturing** (must pass a minimum of 12 hours from the following): CHE 409, FP 420, 474, 475, 478, 521, 532, 535, 536, 537, 550.
- Harvesting/Procurement** (must pass a minimum of five hours from the following): FYE 370, 571, FY 482, 483.
- Ecology** (must pass a minimum of 10 hours from the following): ZY 306, FAA 502, BY 513.
- Fisheries** (must pass a minimum of 10 hours from the following): FAA 502, 536, 537, 538.
- Natural History/Taxonomy** (must pass a minimum of 10 hours from the following): FY/ENT 526, BY 506, ENT 304, 505, FAA 538, ZY 402, 574, 575, 576.
- Urban Forestry** (must pass FY 565 and a minimum of five hours from the following): HF 221, 222, 521, CP 501.
- Economics** (must pass a minimum of nine hours from the following): EC 302, 340, 556, AEC 509, 512.
- Forest Policy** (must pass a minimum of nine hours from the following): FY 344, EC 340, 471, PO 209, 210, 325, 327.
- Social Perspectives** (must pass a minimum of seven hours from the following): (either RSY 261 or SOC 201), RSY 362, 561, 564, 565, GY 504, 507, FY 344.
- Business** (must take AC 215 and five hours from the following): MT or AC 241, FI 361, MN 310, MT 331.
- Quantitative Studies** (must MH 162, 163 and six hours from the following): MH 264, 265, 266, DMS 560, 561, 562, CSE 200, 220, ISE 341, 343.
- Wildlife** (must pass eight hours from the following): ZY 328 + L. 528 + L. 425, 527, 531, BY 506.

Honors Program in Forestry

The Honors Program in Forestry provides able students the opportunity to explore in depth areas in which they are interested and to prepare for graduate school. The program is flexible, permitting concentration of effort in areas of the student's choosing.

Students with at least five quarters remaining in the Forestry curriculum, and with a GPA of 2.9 or better, may apply for admission to the program by petition to the Honors Program Advisor and the University Honors Program.

The curriculum model is identical in the first three years to the non-honors model presented above. The senior year is then open for concentrations and electives, except that Advanced Composition (EH 400, EH 404, or EH 408, as provided in the University Core requirements), FY 590 Seminar (1), and FY 499 Honors Project (2-5) must be taken. Students must build at least two concentrations from those designed by the faculty and listed under the forestry program, or designed under the guidance of a faculty advisor. Honors students must have at least 32 credit hours in concentrations. Students then have 13-16 credit hours of free electives, depending on credit hours for the Honors Project. The senior year is shown below.

SENIOR YEAR

Second Quarter

First Quarter		Second Quarter		Third Quarter	
Concentration/Electives	16	EH Adv. Composition (p. 16)	5	FY 590 Seminar	1
.....		Concentration/Electives	12	FY 499 Honors Project	2-5
				Concentration/Electives	11-14

TOTAL — 202 QUARTER HOURS

Forest Engineering

Forest Engineering students receive academic training that addresses the engineering of forest systems, natural resources and related manufacturing industries. The goal of the program is to produce engineers grounded in basic and applied principles in engineering, forestry, natural resources and biosystems. The degree program is designed to teach students to solve problems by considering engineering, as well as, biological aspects of natural resource systems. This problem-solving approach uses a foundation of engineering courses common to all engineering programs, including mathematics, physics, computer applications and the engineering sciences. To emphasize a systems approach, the program also contains a strong foundation in forestry and includes courses in forest biology, forest measurements, surveying, forest economics and forest management. The student builds on these fundamentals by completing additional required courses in engineering and forestry. Developing practical solutions to real-world problems is the focus throughout the program. In the senior year two-quarter senior design experience, the student is part of a design team that develops a solution to an engineering problem presented by a cooperating industrial partner. The forest engineering graduate is thus well-equipped to solve real-world engineering problems in forestry and related sectors of our economy.

Careers for graduates include design, development, consulting, management, sales, testing, construction and research. They work in their own firms or find positions in forest operations management, forest and land management, environmental management and protection, machine development, process engineering, structural design and natural resource conservation. Graduates also pursue advanced degrees in engineering, forestry, business, science, law and other fields.

The curriculum is coordinated by the College of Engineering and the School of Forestry. Students register in the College of Engineering and are assigned academic advisors in Agricultural Engineering and in Forestry. Beginning students should apply to the College of Engineering and complete the Pre-Forest Engineering program. Forest Engineering majors must meet School of Forestry requirements for admission to the Summer Field Practicum. For qualified students who develop an interest in forest engineering during their freshman year, an alternate course sequence for completion of the Pre-Forest Engineering program under the guidance of an Agricultural Engineering and a Forestry advisor is available in the School of Forestry.

See the College of Engineering section for program objectives, curriculum model, career opportunities, admission and degree requirements.

School of Human Sciences

JUNE M. HENTON, Dean

ARTHUR W. AVERY, Associate Dean

DOROTHY H. CAVENDER, Associate Dean

HUMAN SCIENCES is a professional program drawing from the natural and social sciences, the arts and humanities. It integrates and interrelates knowledge from these disciplines to promote the well-being of individuals and families. The course of study provides a broad liberal education, specialized career preparation, as well as a background for individual and family living. Areas of specialization focus on aspects of environment, health and human development. Human Sciences offers men and women professional and pre-professional preparation careers in education, business, industry, social agencies and government.

Programs of study leading to the Bachelor of Science degree can be planned within five curricula in the School of Human Sciences. These curricula are designed with flexibility to meet the needs of students with various interests. The School includes the Departments of Consumer Affairs, Human Development and Family Studies and Nutrition and Food Science.

Graduation Requirements: To earn the bachelor's degree from the School of Human Sciences, students must complete the hours and subject matter requirements of their curricula and must have a minimum cumulative GPA of 2.0 on all course work attempted at Auburn University, and in addition, a 2.0 cumulative GPA on all work attempted in the major.

Transfer credit will not normally be allowed for any course passed with a grade lower than C at any other college or university.

Department of Consumer Affairs

The Department of Consumer Affairs focuses on consumers' interactions with their near physical environment. Two majors are offered: Apparel Merchandising, Design and Production Management and Interior Environments. These curricula focus on principles of design, product development, management, science and technology and consumer behavior. Majors in these curricula may lead to careers in business, industry and government which apply knowledge to developing, evaluating and merchandising consumer products, interpreting consumers' wants and needs, informing consumers and designing environmental spaces. A 10-week senior-level internship is required in both curricula.

Apparel Merchandising, Design and Production Management

Apparel Merchandising, Design and Production Management is a professional curriculum with three options providing preparation and specialization related to students' professional goals. Diversity within the major allows students to select among such varied fields as apparel design, apparel production management, retail sales, apparel merchandising, retail buying, retail management, apparel product development, visual merchandising, fashion promotion, fashion journalism and consumer-producer relations. Located in the heart of the textile and apparel industry, a unique interdisciplinary structure exists between Apparel Merchandising, Design and Production Management and the Department of Textile Engineering, the College of Business, the Agricultural Experiment Station (research) and the Cooperative Extension System on the campus.

The three options are Apparel Merchandising, Apparel Design and Apparel Production Management. Students take the 143-hour curriculum core and focus on one option, taking 28-32 hours of specified professional courses, 14-18 hours of approved professional electives and 10 hours of free electives.

Curriculum in Apparel Merchandising, Design and Production Management (AMDP)

Options: Apparel Merchandising, Apparel Design and Apparel Production Management

FRESHMAN YEAR									
First Quarter			Second Quarter				Third Quarter		
CA	115 Textile Complex	5	MH	160 Pre-Cal. w/Trig.	5	CA	140 App. Prod. Dev. I	4	
EH	110 Eng. Comp.	5	CA	116 Art for Liv.	3	U	102 Political Economy	3	
Core	History (p. 16)	3	Core	History (p. 16)	3	Core	History (p. 16)	3	
U	101 Soc. & Culture	3	Core	Science *	5	Core	Science *	5	
							Free Elective		

School of Human Sciences

SOPHOMORE YEAR

HDF 157 Fam. Hum. Dev.	3	NFS 200 Nutr. & Health	3	PA 201 or 219	5
CA 226 Apparel Design	3	EH 221 Great Books II	5	HDF 200 Mgt. for Cons.	4
U 103 Individual & Society	3	CA 205 Soc./Psy. of Clothing	3	CA 240 App. Prod. Mgt. I	4
EH 220 Great Books I	5	Prof. Req./Elec. **	7	Prof. Req./Elec. **	5
Free Elective	3				

JUNIOR YEAR

CA 305 Textiles	5	CA 334 Intro. to Intern.	1	CA 516 App. Qual. Analysis	3
EC 202 or 301	5	CA 535 Text. Testing	5	Core Fine Arts (p. 16)	3
EH Adv. Eng. (p. 16)	5	Prof. Req./Elec. **	4	Prof. Req./Elec. **	11
CA 330 Prof. Planning	1	MT 331 Prin. Marketing	5		

SENIOR YEAR

CA 525 Hist. of Costume	5	CA 521 World Production	5	CA 581 Internship	12
CA 524 Fashion Change	3	Prof. Req./Elec. **	13		
Free Elective	4				
Prof. Req./Elec. **	6				

TOTAL—199 QUARTER HOURS

* CH 103, 103L, 104, 104L or BI 105 and 106 or 107. Students who transfer into the AMDP curriculum with credit in GL or PS which satisfies the AU core curriculum science requirement must also complete either the BI or CH sequence to fulfill the curriculum requirements for AMDP.

** Professional courses and professional electives from selected option.

One-Year Transfer Programs

Qualified students in all three options may apply for one-year transfer programs to be taken during the junior year. Programs are available with the Fashion Institute of Technology in New York in apparel and textile design, merchandising and management and with the Southern Technical College in Marietta, GA. in apparel engineering. Transfer programs are planned with an advisor so that transfer credits meet Auburn curriculum requirements while the student earns an associate degree from the transfer institution. For details, contact the head of the Department of Consumer Affairs.

Interior Environments

The Interior Environments curriculum focuses on the design of the near environment, the aesthetic and functional aspects of space planning, furnishings and materials, mechanical equipment and the integration of these aspects of the built environment to fit the needs of the user.

Many career opportunities are open to graduates of the INE program. These include positions in design firms, private design practice, kitchen/bath design, lighting design and retail furnishings. A professional option, Specialization in Kitchen and Bath Design, is offered in the INE curriculum.

All INE majors are required to complete a professionally supervised internship.

On- and off campus transfer applicants must meet criteria listed on page 16 of the *Auburn University Bulletin* and must file applications with the INE Coordinator no later than June 16. Screening of applications for Fall admission begins in July with applicants notified in August. Transfers admitted MUST begin the program the subsequent fall term. Course work in the major must be taken in sequence and transfer students should anticipate that additional quarters of study may be required to complete the program. Entering freshmen admitted to Auburn who declare the INE major must begin their INE program of study in the fall term after they are admitted, or they will be held to the same admission requirements as transfer students.

Curriculum in Interior Environments (INE)

FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
CA 100 Orient. to INE	1	CA 120 Tech. Drawing	3	CA 121 Spatial Analysis	3
CA 116 Art for Liv. 1	3	HDF 157 Fam. Hum. Dev.	3	NFS 200 Nutr. & Health	3
MH 160 Pre-Cal. w/Trig.	5	Core History (p. 16)	3	HDF 200 Mgt. for Cons.	4
EH 110 English Comp.	5	Core Science *	5	Core History (p. 16)	3
Core History (p. 16)	3	AT 171 or 172 or 173	3	Core Science *	5
Elective or ROTC	1	Elective or ROTC	1	Elective or ROTC	1

SOPHOMORE YEAR

CA 221 Res. Space Plan	4	CA 222 Furn. for Interiors	4	CA 215 Sur. of Dec. Arts I	5
EH 220 Great Books I	5	CA 224 Fund. of Visual Pres.	3	CA 223 Res. Interiors I	4
U 101 Societies & Cult.	3	CA 255 Tex. for Inter.	3	U 103 Indiv. in Society	3
PA 101 or 102 or 219	5	EH 221 Great Books II	5	CSE 100 Intro. to PC Appl.	3
Elective or ROTC	1	U 102 Pol. Econ.	1	Elective or ROTC	1
		Elective or ROTC	1		

JUNIOR YEAR

CA 315 Sur. of Dec. Arts II	3	CA 333 Lighting Des.	5	CA 353 Bus. Prac. in INE	5
CA 324 Non-Res. Int. I	4	Prof. Elective or ROTC	3	CA 363 Env. Sys./Energy Mgt.	3
EC 301 Econ. Prin. & Bus. Pol.	5	CA 344 Codes & Access.	3	CA 424 Non-Res. Int. II	4
AC 211 Accounting	4	MT 331 Prin. of Mkt.	5	EH 408 Bus. & Prof. Writing	5
CA 336 Orient. to Intern. INE	1				

SENIOR YEAR

CA 422 Kit. & Bath Plan.	5	CA 423 Res. Interiors	4	CA 436 Internship in INE	12
CA 478 Visual Merch.	3	Prof. Electives	12		
Prof. Elective	5				
Elective or ROTC	3				

TOTAL — 202 QUARTER HOURS

* BI 105 and 106 or 107; or CH 103, 103L, 104, 104L.

SUGGESTED PROFESSIONAL ELECTIVES

Business and Consumer Orientation (minimum of 10 hours): AC 212, 241, 242; MN 310; MT 332, 333, 341, 439; CA 431; HDF 528.

Applied Design (minimum of five hours): HF 221, 225, 226, 412; AT 101, 102, 103, 104, 105, 111, 112, 113, 121, 122, 123; BSC 203; CA 216; CP 524, 525, 527, 545.

Design Support (minimum of five hours): BSC 202; AT 370, 371, 372, 373, 374, 375, 376, 377, 378, 379; AR 270, 360; CA 399, 515, 580D; FP 339.

Specialization in Kitchen and Bath Design

Students who desire a Specialization in Kitchen and Bath Design must complete professional electives requirements (20 hours) from the following: 10 hours from BSC 202, 203, CA 490 (Independent Study in CAD) and 10 hours from AC 212, MN 310, AC 241, MT 333, 439 and FI 361. CA 436 - Internship in Interior Environments (12 credit hours) must be completed with a Kitchen and/or Bath Design firm. Completion of the Kitchen and Bathroom Specialization prepares the graduate to take the examination for professional certification. This professional option within the INE curriculum is endorsed by the National Kitchen and Bath Association.

Department of Human Development and Family Studies

The Department of Human Development and Family Studies is concerned with the integration of knowledge from various fields for the purpose of studying individuals and families across the lifespan. The department offers a course of study to prepare students for a variety of careers, including teaching and administering programs for young children, adolescents and adults; parent education; mental health or family financial counseling; and Cooperative Extension. One undergraduate curriculum, including three options, is offered by the department. These options are Infancy and Preschool, School-age and Adolescence and Adult and Aging.

Curriculum in Human Development and Family Studies (HDF)

FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
EH 110 Eng. Comp.	5	BI 105 Pers. In Bio.	5	BI 106 Hum. Biol.	5
HDF 157 Fam. Hum. Dev.	3	U 102 Political Economy	3	U 103 Indiv. & Society	3
U 101 Soc., Cult. & Env.	3	Core History (p. 16)	3	Core Philosophy (p. 16) *	5
Core History (p. 16)	3	Elective or ROTC	5	Core History (p. 16)	3
Elective or ROTC	1			Elective or ROTC	1

SOPHOMORE YEAR

EH 220 Great Books I	5	EH 221 Great Books II	5	NFS 200 Nutr. & Health	3
HDF 200 Mgt. for Cons.	4	CA 116 Art for Liv.	3	SOC 201 Sociol.	or
HDF 267 Hum. Dev.	5	HDF 269 Mate Select.	4	PG 201 Psychology	3-5
HDF 287 Careers	2	Elective or ROTC	4	MH Core Math (p. 16)	5
Elective or ROTC	1			Core Fine Arts (p. 16)	3
				Elective or ROTC	1

JUNIOR YEAR

HDF 306 Fam. Interact.	4	HDF 301 Early & Mid. Child. Dev.	5	HDF 308 Rel. Comp.	4
EH 404 Tech. Writ.	or	Prof. Electives **	8	HDF 473 or 475 or 477	4
EH 408 Bus. & Prof. Writ.	or	Elective	2	Prof. Electives **	7-9
SOC 220 Stat. ***	5				
PG 304 Quant. Analysis	5				

School of Human Sciences

SENIOR YEAR

HDF 304 Hum. Sexuality	4	HDF 420 Rec. Research	4	HDF 497 Internship ****	5-15
Electives	4	Electives	6	Prof. Electives **	0-10
Prof. Electives **	6	Prof. Electives **	4		

TOTAL — 185 QUARTER HOURS

* Child Life emphasis requires PA 218.

** Students focus on one of three options by taking 16-28 hours of specialized professional electives and 5-15 hours directed internship.

*** MN 207 or CSE 204 may be substituted for the Statistics requirement by student who will focus their internship on the consumer and family economics area.

**** Credit hours for Curriculum Requirements for Major (i.e., departmental major courses, required supporting courses and required professional electives) must total 85. The Internship Handbook contains information regarding recommended professional electives for specific internship types. Applications for the internship must be submitted to the Internship Director three (3) quarters in advance of the proposed internship quarter.

Department of Nutrition and Food Science

The Department of Nutrition and Food Science offers two majors: Hotel and Restaurant Management and Nutrition and Food Science. The Hotel and Restaurant Management program emphasizes food and lodging services for consumers in the tourism industry. The major in Nutrition and Food Science offers three options: Nutrition/Dietetics, Food Science and Nutrition Science. Nutrition is concerned with human physiology and biochemistry and their relationship to human health, diet and well-being. The Nutrition/Dietetics option meets the competencies of the American Dietetic Didactic Program in Dietetics (DPD) to prepare students for the post-baccalaureate training (dietetic internship or advanced preprofessional practice program) needed to sit for the registration exam for dietitians. Food Science utilizes the biological and physical sciences to study the nature of foods and the principles underlying food production and processing. The Nutrition Science Option provides outstanding pre-medical preparation as well as a solid foundation for graduate study. These curricula lead to a variety of careers in health care, business and industry, government and education.

Hotel and Restaurant Management

The Hotel and Restaurant Management major prepares students for careers in hotels, motels, restaurant facilities and other positions in the tourism and hospitality industry. The program is structured to address the needs of the premium service segment of the hospitality industry. The program mission is to educate men and women in the arts and sciences of hospitality management from a multi-cultural perspective, to prepare them with a thorough understanding of the premium service concept in hotels, restaurants and clubs and to instill in them high standards of excellence for the performance of their professional responsibilities.

Curriculum in Hotel and Restaurant Management (HRM)

FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
EH 110 Eng. Comp.	5	BI 105 Pers. in Biol.	5	BI 106 Hum. Biol.	5
MH 160 Pre-Cal. w/Trig.	5	CSE 100 Intro. PC	3	NFS 200 Nutr. & Health	3
HRM 101 Intro. Hosp. Mgt.	3	CA 116 Art for Living	3	HDF 157 Fam. & Hum. Dev.	3
Core History (p. 16)	2	Core History (p. 16)	3	COM 100 Prof. Comm.	3
		Core Fine Arts (p. 16)	3	Core History (p. 16)	3

SOPHOMORE YEAR

U 101 Soc. & Culture	3	U 102 Political Economy	3	PA 219 Bus. Ethics	5
AC 215 Gen. & Cost Acct.	5	EH 221 Great Books II	5	U 103 Indiv. & Society	3
EH 220 Great Books I	5	HDF 200 Mgt. for Cons.	4	MB 201 Pers. in Microbiol.	5
NFS 202 Prin. Fd. Prep.	3	AC 241 Business Law	5	EC 301 Ec. Prin. & Bus. Pol.	5
NFS 202L Prin. Fd. Prep. Lab.	2				

JUNIOR YEAR

HRM 330 Hosp. Law	4	HRM 460 Serv. Mgt.	4	ADS 270 Comm. Meat Mgt.	5
HRM 320 Hosp. Fin. Mgt.	4	HRM 340 Hosp. Mkt.	3	HRM 450 Hotel Mgt.	4
MN 310 Prin. of Mgt.	5	HRM 410 Rest. Mgt.	4	PG 304 Quant. An. in Psych.	5
MT 331 Prin. of Mkt.	5	EH 404 or 408	5	Prof. Elective	3

SENIOR YEAR

NFS 304 Quan. Fd. Prep.	3	HRM 480 Adv. Bev. Mgt.	3	NFS 524 Prof. Internship **	12
NFS 304L Quan. Fd. Prep. Lab.	2	FI 361 Prin. Bus. Fin.	5		
Electives	6	NFS 598 Topics in Hospitality *	3		
Prof. Electives	4	NFS 555 Hosp. Hum. Res. Mgt.	5		

TOTAL — 196 QUARTER HOURS

* Students may take either of the course topics (a) Perspectives in Global Hospitality, (b) Conference Coordination or (c) Resort and Club Management. This course can be repeated in another topic for professional electives.

** Requires approval of internship application which includes proof of having 400 hours in any position in the hospitality industry and a minimum 2.0 GPA.

Nutrition and Food Science

Nutrition and Food Science is a curriculum with three options which permit specialization according to students' personal interests. The Nutrition/Dietetics option prepares students for careers in dietetics, nutrition and nutrition education programs. Opportunities are available for dietitians in clinical, research, community, management, education and consulting settings.

The Food Science option prepares students for careers in the foods industry in the area of quality control, product development and food safety, as well as with government agencies. Through electives, majors may focus on the business, communications, consumer education or retailing aspects of the foods industry. The Food Science option meets the educational requirements of the Institute of Food Technologists.

The Nutrition Science option prepares students for health professional schools, such as medical, dental and physical therapy. This degree option provides an excellent background for graduate study.

American Dietetic Association Plan V educational requirements will be met by the Nutrition/Dietetics option. The program is approved by the American Dietetic Association. Graduates choosing this option are required to complete an additional supervised practice experience in order to be eligible to take the national examination to become a registered dietitian.

Curriculum Nutrition/Dietetics Option *

First Quarter			FRESHMAN YEAR			Third Quarter		
			Second Quarter					
MH	160 Pre-Cal. w/Trig.	5	CH	103 Fund. of Chem. I	4	CH	104 Fund. of Chem. II	4
BI	101 Biology	5	CH	103L Gen. Chem. Lab.	1	CH	104L Gen. Chem. Lab.	1
U	101 Soc., Cult. & Env.	3	EH	110 Eng. Comp.	5	NFS	200 Nutr. & Health	3
Core History (p. 16)		3	U	102 Political Economy	3	U	103 Indiv. & Society	3
			Core History (p. 16)		3	Core History (p. 16)		3
						CSE	100 Comp. Appl.	3
SOPHOMORE YEAR								
ZY	250 Human Anatomy	5	ZY	251 Physiology	5	CH	203 Org. Chem.	5
EH	220 Great Books I	5	EH	221 Great Books II	5	HDF	200 Mgt. for Cons.	3
NFS	201 Intro. Food Science	3	HDF	157 Fam. & Hum. Dev.	3	CA	116 Art for Liv.	3
NFS	202 Food Prep.	3	Core Fine Arts (p. 16)		3	Elective *		4
			NFS	202L Food Prep. Lab.	2			
JUNIOR YEAR								
NFS	307 Survey of Diet.	1	NFS	318 Nutr. Biochem.	4	NFS	382 Prin. Norm. Nutr. I	4
MB	300 Microbiology	5	NFS	318L Nutr. Biochem. Lab.	1	NFS	382L Nutr. Assess. I	1
NFS	304 Quant. Food Prep.	3	MN	310 Prin. of Management	5	Core Philosophy (p. 16)		5
NFS	304L Quant. Food Lab.	2	Statistics **		5	Elective *		3
Elective *		4				EH	404 Tech. Writing	5
SENIOR YEAR								
NFS	409 Orient. to Diet. Inter.	1	NFS	502 Clin. Nutr. I	5	NFS	456 Food Svc. Org. Adm.	5
VED	415F Teach. Area of Spec.	5	NFS	555 Hum. Res. Mgt. in Hos.	5	NFS	543 or 564	5
NFS	462 Community Nutrition	3	NFS	592 Nutr. Life Cycle	5	NFS	574 Clin. Nutr. II	3
HDF	310 or CCP 521	4				Elective *		3
NFS	392 Prin. Norm. Nutr. II	5						

TOTAL — 196 QUARTER HOURS

* Seven hours of professional electives and seven hours of free electives.

** Select one of the following statistics courses: SOC 220, RSY 220, DMS 215, PG 304.

Food Science Option *

First Quarter			FRESHMAN YEAR			Third Quarter		
			Second Quarter					
MH	160 Pre-Cal. w/Trig.	5	CH	103 Fund. of Chem. I	4	CH	104 Fund. of Chem. II	4
BI	101 Biology	5	CH	103L Gen. Chem. Lab.	1	CH	104L Gen. Chem. Lab.	1
NFS	200 Nutr. & Health	3	MH	161 An. Geom. & Calc.	5	EH	110 Eng. Comp.	5
Core History (p. 16)		3	CA	116 Art for Liv.	3	MH	162 An. Geom. & Calc.	5
			Core History (p. 16)		3	Core History (p. 16)		3
SOPHOMORE YEAR								
BI	102 Plant Biology	5	BI	103 Animal Biology	5	U	103 Indiv. & Society	3
EH	220 Great Books I	5	Core Fine Arts (p. 16)		3	NFS	202 Food Preparation	3
NFS	201 Intro. Food Sci. Tech.	3	EH	221 Great Books II	5	NFS	202L Food Prep. Lab.	2
U	101 Soc., Cult. & Env.	3	U	102 Political Economy	3	CH	203 Org. Chem.	5
						PS	200 Found. of Physics	5
JUNIOR YEAR								
EH	404 Tech. Writing	5	NFS	318 Nutr. Biochem.	4	MB	300 Microbiology	5
AN	555 Prin. Food Engr. Tech.	5	NFS	318L Nutr. Biochem. Lab.	1	DMS	215 Intro. Biol. Statistics	5
CSE	100 Comp. Appl.	3	Electives *		5	NFS	543 Food Chemistry	5
HF	340 or ADS 470 and elect.	5	Core Philosophy (p. 16)		5	HDF	157 Fam. & Hum. Dev.	3

School of Human Sciences

SENIOR YEAR

NFS 545 Food An. & Qual. Ct.	5	NFS 429 Sem. in NFS	1	NFS 564 Food Product Dev.	5
COM 100 Prof. Communication	3	EC 301 Econ. Prin. & Pol.	5	MB 556 Food Micro.	5
HDF 200 Mgt. for Cons.	4	NFS 577 Plant Sanitation	4	Electives or ROTC *	5
Electives or ROTC *	4	Electives or ROTC *	4		

TOTAL — 196 QUARTER HOURS

* 8-9 hours of professional electives and 10 free electives.

Nutrition Science Option

(Coordinate with Pre-Health Professions Advisor in COSAM.)

FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
CH 103 Fund. of Chem. I	4	CH 104 Fund. of Chem. II	4	CH 105 Fund. of Chem. III	4
CH 103L Gen. Chem. Lab.	1	CH 104L Gen. Chem. Lab.	1	CH 105L Gen. Chem. Lab.	1
MH 161 An. Geom. & Calc.	5	U 102 Political Economy	3	EH 110 English Comp.	5
U 101 Soc. & Culture	3	BI 101 Biology	3	U 103 Indiv. in Soc.	3
Core History (p. 16)	3	Core History (p. 16)	3	Core History (p. 16)	3
SM 199 Orientation	1				

SOPHOMORE YEAR

CH 207 Org. Chem.	4	CH 208 Org. Chem.	3	CH 209 Org. Chem.	4
CH 207L Org. Chem. Lab.	1	CH 208L Org. Chem. Lab.	2	ZY 251 Physiology	5
EH 220 Great Books I	5	ZY 250 Human Anatomy	5	PS 207 Intro. Physics III	3
NFS 200 Nutrition & Health	3	PS 206 Intro. Physics II	3	PS 207L Intro. Physics Lab.	1
PS 205 Intro. Physics I	3	PS 206L Intro. Physics Lab.	1	Elective or ROTC	3
PS 205L Intro. Physics Lab.	1				

JUNIOR YEAR

EH 221 Great Books II	5	NFS 318 Nutr. Biochemistry	4	CA 116 Art for Living	3
NFS 202 Food Prep.	3	NFS 318L Nutr. Biochem. Lab.	1	EH 404 Tech. Writing	5
NFS 202L Food Prep. Lab.	2	SOC 220 Statistics	5	NFS 382 Pnn. Norm. Nutr. I	4
CSE 100 Comp. Appl.	3	HDF 157 Fam. & Hum. Dev.	3	NFS 382L Nutr. Assessment Lab.	1
MB 300 Microbiology	5	COM 100 Prof. Comm.	3	PA 218 Ethics in Hlth. Prof.	5

SENIOR YEAR

ZY 310 Cell Biology	4	ZY 300 Genetics	5	NFS 574 Clinical Nutr. II	3
ZY 310L Cell Biology Lab.	2	NFS 502 Clinical Nutr. I	5	HDF 200 Mgt. for Cons.	4
NFS 392 Prin. Norm. Nutr. II	5	NFS 592 Nutr. Life Cycle	5	Core Fine Arts (p. 16)	3
NFS Elective	4	Elective or ROTC	2	Electives or ROTC	6

TOTAL — 196 QUARTER HOURS

To meet the educational requirements of the American Dietetic Association, the following courses must be taken: NFS 304, 304L, NFS 456, 462, 564, MN 310, EC 301, VED 415F. Graduates choosing this option are required to complete an additional supervised practice experience in order to be eligible to take the national examination to become a registered dietitian.

Dual Objective Program

Dual objective programs with the College of Education are open to students registered in the School of Human Sciences in the following majors: Human Development and Family Studies; Nutrition and Food Science; Apparel Merchandising, Design and Production; and Interior Environments. Students completing a dual objective program earn the Bachelor of Science in the declared major from the School of Human Sciences and are eligible for an Alabama Class B teachers certification.

Options in Cooperative Extension

Students enrolled in any of the majors in the School may prepare for a career in the Cooperative Extension System through selection of certain courses as electives. Majors may fulfill the requirements of the Alabama Cooperative Extension System through scheduling of the following courses: NFS 200, 202, 202L; CA 140, 206, 222, 255 or 305; HDF 467, 541; EM 200.

International Minor In Human Sciences

The International Minor in Human Sciences, comprised of 30 hours of course work in foreign language, area study and human sciences content combined with international experience through study abroad, offers students a unique credential to enhance their competitiveness in the global marketplace and prepares them to adapt and respond successfully to these challenges.

I. Foreign Language Competency: 15 credits. For students required to take foreign language as part of their major or college core curriculum, the foreign language competency requirement for the International Minor in Human Sciences (IMHS) shall be satisfied in one of the following ways:

A) If one year (15 credit hours) of foreign language is required in the major or college core, an additional 15 credit hours in the same language over and above the major or core requirements will satisfy the IMHS foreign language requirement.

B) If more than one year of foreign language is required in the major, 15 credit hours in a second foreign language will satisfy the IMHS foreign language requirement.

II. Area of Study: 3-5 credits. One course in any of the following areas; geography, political science, history, anthropology/sociology, economics or other content areas approved by Human Sciences' Dean for Academic Affairs. The chosen course must relate to study abroad focus and be approved by the student's faculty advisor. Students are encouraged to take additional courses to fulfill other available free or professional elective credits.

III. Human Sciences Content Area: 6 credits. Human Sciences majors shall take two of the following three courses in Human Sciences outside their department; CA 431 (3), NFS 588 (3), HDF 499 (3).

IV. Study Abroad: 6 credits

A). CA/HDF/NFS 338: Study Abroad Opportunities (1 credit)

B). Study Abroad: 5 credits minimum. If the internship required in the major is completed abroad, a student will take 5 credit hours over and above those internship requirements. Consumer Affairs – CA 538 (5-8); CA 490 (5-8); Nutrition and Food Science – NFS 408 (5-8), NFS 538 (5-8); Human Development and Family Studies – HDF 538 (5-8), HDF 409 (5).

Note: The IMHS is open to non-Human Sciences majors on a space-available basis. Non-majors accepted into the IMHS may be required to take additional courses in Human Sciences content.

Women's Studies Interdisciplinary Minor

Women's Studies, an interdisciplinary minor, advances teaching, research and scholarship about women and women's perspectives. The minor sheds new light on existing knowledge of women and gender, integrates the study and voices of women into traditional disciplines, examines the impact of the social construction of gender, and promotes social change to improve women's, men's, and children's lives. Students who elect the Women's Studies minor choose 30 hours of course work from several academic disciplines: ANT 313, 524, 550; EH 483; HDF 304, 468; FR 432; FL 501, 502; HY 325, 326; PO 503; PG 401, 402; CR 510; SW 320; COM 490.

For more information, contact Donna Sollie (334/844-3230) or the Academic Affairs Office in the School of Human Sciences.

Minors In Communication

Human Sciences majors may use their free elective hours to complete the Communication Minor offered by the Department of Communication, College of Liberal Arts. The minor requires 15 hours of foundation course work and 15 hours of emphasis in one area of the field (RTF, PR, COM or an approved combination of these). Area courses are selected with the assistance of a departmental advisor. Students must meet prerequisites for all courses. Interested students should contact the Academic Affairs Office in the School of Human Sciences and the Department of Communications for additional information and specific requirements.

Minors In Human Development and Family Studies

The minor in Human Development and Family Studies, offered by the Department of Human Development and Family Studies, prepares students in allied fields for the increasing number of positions that involve services to children and families. The 25-hour minor has two options: Track I – Human Development; and Track II – Family Studies. Interested students should contact the HDF department head for specific requirements.

Graduate Work

The School offers work leading to the Master of Science degree, Master of Arts in College Teaching degree and Ph.D. degree in Human Development and Family Studies and Nutrition and Food Science.

College of Liberal Arts

VACANT, *Dean*

JOHN G. HEILMAN, *Associate Dean*

REBEKAH H. PINDZOLA, *Associate Dean*

IN THE COLLEGE OF LIBERAL ARTS a student can specialize in a particular field while also gaining a broad general education. Four academic areas — humanities, fine arts, communications and behavioral and social sciences — are represented by the College's 14 departments: Art; Communication; Communication Disorders; English; Foreign Languages and Literatures; Geography; History; Journalism; Music; Philosophy; Political Science; Psychology; Sociology, Anthropology and Social Work; and Theatre.

Besides affording specialization in majors, the curricula of this College lay a strong foundation for further studies in graduate school or professional school. The College also provides courses needed by students of all other instructional divisions of the University.

Undergraduate Degrees

Academic majors, programs, and options are offered in 46 fields, described below in the **Liberal Arts Curriculum** and in the curricula of the **School of Fine Arts**. Four-year degrees offered by the College in these fields are the Bachelor of Arts, Bachelor of Science, Bachelor of Fine Arts and Bachelor of Music.

Graduate Degrees

Doctor of Philosophy degrees are offered in English, History, Psychology and Public administration and Public Policy. Master of Arts degrees are offered in English, French, Spanish, History, Political Science, Sociology and Communication. Master of Science degrees are offered in Communication Disorders and Psychology.

The designated degrees of Master of Communication Disorders, Master of French Studies, Master of Hispanic Studies, Master of Communication, and Master of Public Administration are offered. The College's School of Fine Arts offers Master of Fine Arts and Master of Music degrees. The College participates in offering an interdisciplinary degree, Master of Arts in College Teaching. Degree programs are described in the *Graduate School Bulletin*.

Education

The College of Education offers a Fifth-Year Program to Liberal Arts students holding a baccalaureate degree in English, foreign language or music. Upon successful completion of the program, a master's degree in Education (M.Ed.) will be awarded and the graduate will be recommended for an A level teaching certificate (master's level certificate).

The University Honors Program

This program offers individual learning opportunities and participation in honors courses to students with extraordinarily high academic aptitude. For more information, refer to the Academic Policies section of this *Bulletin*.

Cooperative Education Programs

Cooperative Education Programs which give students an opportunity to integrate academic training with work experience are offered in Art, Criminal Justice, Economics, English (technical writing), Geography, Health Administration, Journalism, Mass Communication, Political Science, Psychology, Public Administration, Public Relations, Social Work and Sociology. Students alternate each quarter between college and a work assignment provided through the Director of the Cooperative Education Program.

Center for the Arts and Humanities

The Auburn University Center for the Arts and Humanities conducts humanities programs for the general public in localities throughout the state. For information, contact Dr. Allen Cronenberg, Director, in the Center's offices at Pebble Hill.

Curriculum in Liberal Arts

FRESHMAN YEAR

EH 110 English Composition 5	U 102 Political Economy 3	Core Mathematics (p. 16) 5
FL First Year * 5	FL First Year * 5	FL First Year * 5
Core History (p. 16) * 3	Core History (p. 16) * 3	Core History (p. 16) * 3
U 101 Soc., Cult. & Environ. 3		U 103 Indiv. & Society 3

SOPHOMORE YEAR

Core Philosophy (p. 16) 5	EH 220 Great Books I 5	EH 221 Great Books II 5
Core Science (p. 16) 5	Core Science (p. 16) 5	Major 5
	Core Fine Arts (p. 16) 3	

* Fifteen hours of the same foreign language; may qualify for up to 15 hours of advanced placement.

JUNIOR AND SENIOR YEARS

During the junior and senior years the student is to complete major requirements of 45-131 hours; courses specified in support of the major; one second core composition course; and electives. Electives may include six hours of Basic ROTC and six hours of Advanced ROTC. In majors which do not provide sufficient electives for this purpose, ROTC may be taken in lieu of required courses not in the University or College core to be selected with the help of departmental advisor.

TOTAL-192 QUARTER HOURS (range 180-212)

Majors in the Liberal Arts Curriculum

A major may be declared at the time of admission or thereafter but must be declared by the end of the quarter in which the student has completed 80 quarter hours of credit, including transfer and all other credit. A student transferring into the college with 80 or more quarter hours' credit must declare a major upon admission. Before a major is declared, a student will follow the requirements of the Liberal Arts Curriculum and will be identified by the symbol CLA.

Bachelor of Arts: Anthropology, Art, Communication, Corporate Journalism, Criminal Justice, Criminology, Economics, English, Foreign Languages-International Trade, French, Geography, German, History, Journalism, Latin American Studies, Mass Communication, Music, Philosophy, Political Science, Psychology, Public Administration, Public Relations, Religion, Russian Studies, Social Work, Sociology, Spanish and Theatre.

Bachelor of Science: Communication Disorders and Health Services Administration.

Minors

Art History Minor: 27 credit hours. Students will take AT 171-172-173 and select five of the following: AT 370, 371, 372, 373, 374, 375, 376, 377, 378 and the required course AT 570.

Classics Minor: 25 credit hours (interdisciplinary). Students must complete at least 10 credit hours of Latin or Classical Greek language classes above the first year level. Students may complete the remaining hours with credits from upper division Latin or Greek classes or with courses from a range of courses from English, History, Philosophy and Religion. (See list of allowed electives in the Department of Foreign Languages and Literatures.)

Communications Minor: this minor has been designed to give an overview of the discipline and the opportunity to specialize in one of three areas if the student chooses. Courses required for the minor are: RTF 330, COM 350, 360. Students may select courses that meet the following criteria: any three 5-hour RTF or PR or COM courses at the 300-level or above, or any combination of three 5-hour courses at the 300-level or above from RTF, COM or PR. The student is responsible for meeting all course requirements.

English Minor: 25 credit hours, 15 of which must be at the 300-level or above. Courses taken in fulfillment of the University Core Curriculum may not be counted toward the EH minor. Students may take a broad selection of courses or may concentrate their course work in such areas as linguistics and rhetoric, literature, creative writing or technical and professional writing.

French Minor: 25 credit hours. Students may enter at FR 201 or above. No more than 10 hours in FR 201, 202, 203 may count toward the minor. The undergraduate advisor in French must certify appropriate placement.

German Minor: 25 credit hours. Students may enter at GR 201 or above. No more than 10 hours in GR 201, 202, 203 may count toward the minor. Additional courses required include GR 301, 302, 303, and one of the following: GR 311, 312, 313. The undergraduate advisor in German must certify appropriate placement.

History Minor: 25 hours above the 100-level and will include either HY 201-202 or HY 207-208 and 15 additional hours at the 300-level or above.

Italian Studies Minor: 25 credit hours. Required courses: IT 201, 275, 399. IT 399 may also be used as an elective. Students may complete the remaining hours with credits from upper division Italian classes or with courses from an electives list in the department.

Music Minor: 29 credit hours. Required courses: MU 100 (quarterly), 131, 132, 133, 184 (for six quarters), 361, and any two quarters of the following: 351, 352, 353.

Philosophy Minor: 25 credit hours required with PA 101 or a University Core ethics course to be taken as a prerequisite. Students are required to take PA 101 or a University Core ethics course (whichever was not taken to satisfy the University Core), plus an additional 20 hours of philosophy courses at or above the 300-level.

Political Science Minor: 25 credit hours. Required courses: PO 209. Twenty additional hours of PO courses, a minimum of 15 of these hours must be at the 300-level or above. Students must take at least one course in two of the following areas: comparative politics, international relations, public law and conflict resolution or public administration.

Religious Studies Minor: 25 credit hours. Required courses: RL 201, one of the following: RL 210, 220, 245 and one from RL 303 or 304, plus RL electives at 300-level or higher to complete a minimum of 25 hours.

Social Work Minor: 25 credit hours. Required courses include: SW 376 or any five-hour, 300-level SW course with approval of departmental advisor, 320, 375, 377, 380, 381.

Spanish Minor: 25 credit hours. Students may enter at SP 201 or above. No more than 10 hours in SP 201, 202, 203 may count toward the minor. The undergraduate advisor in Spanish must certify appropriate placement.

Women's Studies Minor: Women's Studies, an interdisciplinary minor, advances teaching, research and scholarship about women and women's perspectives. The minor sheds new light on existing knowledge of women and gender, integrates the study and voices of women into traditional disciplines, examines the impact of the social construction of gender and promotes social change to improve women's, men's and children's lives. Students who elect this minor choose 30 hours of course work from several academic disciplines: ANT 313, 524, 550, EH 483, HDF 304, 468, FR 432, FL 501, 502, HY 325, 326, PO 503, PG 401, 402, CR 510 and SW 320.

Options

Engineering. This program provides for enrollment in the Liberal Arts Curriculum and in the College of Engineering. Two degrees will be awarded: a bachelor of arts degree in the Liberal Arts major and a bachelor's degree in the designated engineering field. Students should receive dual advising through the Colleges of Liberal Arts and Engineering. Typically, five to six academic years are necessary to complete dual requirements.

Pre-Law. Most majors and curricula are accepted as preparation for the study of law. Courses deemed useful, and which may be taken as electives, in majors, and in some cases to fulfill certain core requirements, are as follows: AC 215, 241, 242, COM 100, 311, 370, 470, EH 220, 221, 400, 408, 410, EC 202, 203, 433, HY 306, 502, 571, 572, PA 101, 102, 201, 218, 220, 492, PO 330, 332, 501, 502, 503, 504, 518, PG 201, 356.

Most accredited professional law schools require for admission a bachelor's degree, an excellent scholastic record, and an excellent score on the Law School Admission Test (LSAT). The LSAT should be taken at least nine months ahead of the projected date of law school entrance. The University conducts a Pre-Law Program in Haley Center to provide advice on preparing for the study of law and law school admission. Interested students should confer with the Practitioner in Residence during orientation sessions prior to entering Auburn and regularly thereafter.

Pre-Health. Most majors and curricula in Liberal Arts are accepted as preparation for professional degrees in health, including advanced degrees from schools of medicine, dentistry, optometry, physical therapy, occupational therapy and others. Generally, particular courses in the sciences, mathematics and philosophy should be taken in the University Core. Additional sciences and mathematics may be needed as electives. The University's Pre-Health Advisor, housed in the College of Sciences and Mathematics, should be consulted for elective and core course guidance for assistance in applying to graduate/professional schools. The Liberal Arts Advisor is available for all other matters related to the student's undergraduate studies.

Majors

Anthropology Major (ANT)

UNIVERSITY CORE

EH 110 English Composition	5	EH Adv. Comp. (p. 16)	5	EH 220-221 Grt. Bks. I & II	10
Core History (p. 16)	3-3-3	Core Mathematics (p. 16)	5	Core Fine Arts (p. 16)	3
U 101 Society & Culture	3	U 102 Political Economy	3	U 103 Indiv. & Society	3
BI 105 Perspectives in Biology	5	Core Philosophy (p. 16)	5	BI 106 Human Biology	5

COLLEGE CORE

FL Foreign Language	5-5-5
---------------------	-------

MAJOR

ANT 200 Biosocial Background	3	ANT 201 Cultural Framework	3	ANT 206 Cultural Anthropol.	5
ANT 207 Archaeology	5	ANT 306 Phys. Anthropology	5	ANT 511 Lang. and Cult.	5
ANT 599 Senior Thesis	3	ANT 303 or 403	5	ANT Electives	15
SOC 201 Intro. to Sociology	3	SOC 220 Statistics	5	SOC/RSY 370 Meth. of Soc. Res.	5

Hours in major, 49.

SUPPORTING COURSES

COM 100 Prof. Comm.	3
---------------------	---

Other: A 20-hour concentration approved by advisor. Electives, 19 hours.

TOTAL HOURS REQUIRED, 180

Art Major (ATLA)

UNIVERSITY CORE

EH 110 English Composition	5	EH Adv. Comp. (p. 16)	5	EH 220-221 Grt. Bks. I & II	10
Core History (p. 16)	3-3-3	Core Mathematics (p. 16)	5	Core Fine Arts (MU or TH) (p. 16)	3
U 101 Society & Culture	3	U 102 Political Economy	3	U 103 Indiv. & Society	3
Core Science (p. 16)	5	Core Science (p. 16)	5	Core Philosophy (p. 16)	5

COLLEGE CORE & SUPPORTING COURSES

FL Foreign Language	5-5-5	COM 100 Prof. Comm.	3
---------------------	-------	---------------------	---

MAJOR

AT 111-2-3 Fund. Draw.	4-4-4	AT 121-2-3 Fund. Dsgn.	4-4-4	AT 171-2-3 Hist. of Art	3-3-3
Any six (6) courses from the following with at least one course in three (3) different sequences:					
AT 211-212-213 Figure Drawing	4-4-4	AT 231-232-233 Painting	4-4-4		
AT 241-242-243 Printmaking	4-4-4	AT 251-252-253 Sculpture	4-4-4		
AT 255 Ceramics	4				
Three (3) 300-level art history courses	3-3-3	Three (3) 200/300/400-level studio courses	4-4-4		

Hours in major, 78. Electives, 35 hours.

TOTAL HOURS REQUIRED, 192

Communication Major (COM)

UNIVERSITY CORE

EH 110 English Composition	5	EH Adv. Comp. (p. 16)	5	EH 220-221 Grt. Bks. I & II	10
Core History (p. 16)	3-3-3	Core Mathematics (p. 16)	5	Core Fine Arts (p. 16)	3
U 101 Society & Culture	3	U 102 Political Economy	3	U 103 Indiv. & Society	3
Core Science (p. 16)	5	Core Science (p. 16)	5	Core Philosophy (p. 16)	5

COLLEGE CORE

FL Foreign Language	5-5-5
---------------------	-------

MAJOR

RTF 330 Fnd. of Mass Comm.	5	COM 350 Fnd. of Hum. Comm.	5
COM 360 Fnd. Rhet. & Soc.	5	COM 100 Professional Communication	3

Two of these:

COM 310 Sp. Before Aud.	5	COM 320 Oral Interp.	5	COM 340 Comm. in Org.	5
COM 341 Sm. Group Comm.	5	COM 370 Arg. Discourse	5	COM 311 Persuasive Discourse	5

and 25 additional hours within the department, at least 15 of which must be at the 400 level or higher. Hours in major, 53.
Note: COM 350, 360 and RTF 330 are prerequisites for all 400-level departmental courses for majors in all COM sequences.

SUPPORTING COURSES

30 hours must be taken in one or 15 hours in each of two cognate areas outside the department but with advisor approval.
Electives, 23 hours.

TOTAL HOURS REQUIRED, 180

Communication Disorders Major (CD)

Students desiring the Communication Disorders (CD) major must formally apply for admission to the program after completion of 45 quarter hours of course work that meets university core requirements. Applications and procedures for admission are available in the CD Department, 1199 Haley Center. Admission decisions are made Fall and Spring quarters, however, applications may be submitted at any time.

College of Liberal Arts

UNIVERSITY CORE

EH 110 English Composition	5	EH Adv. Comp. (p. 16)	5	EH 220-221 Grt. Bks. I & II	10
Core History (p. 16)	3-3-3	Core Mathematics (p. 16)	5	Core Fine Arts (p. 16)	3
U 101 Society & Culture	3	U 102 Political Economy	3	U 103 Indiv. & Society	3
Core Science (p. 16)	5	Core Science (p. 16)	5	Core Philosophy (p. 16)	5

COLLEGE CORE

FL Foreign Language	5-5-5
---------------------------	-------

MAJOR

CD 340 Sp. & Hear. Mech.	5	CD 341 Phonetics	4	CD 350 Intr. Sp. Path-Aud.	5
CD 355 Sp. & Hear. Sci.	4	CD 558 Clin. Proc. Sp. Path.	4	CD 559 Sp.-Lang. Path.	2
CD 551 Articulation Dis.	5	CD 552 Lang. Acq. in Child.	5	CD 553 Fluency Dis.	5
CD 554 Vocal Dis.	5	CD 560 Intr. Audiology	5	CD 556 Ch. Adol. Lang. Dis.	4
CD 562 Hr. Ev., Rehab./Con.	5	CD 565 Intr. Clin. Audio.	4		

Hours in major, 62.

SUPPORTING COURSES

COM 100 Prof. Comm.	3	Concentration approved by advisor	20
Electives, 19 hours; 2.2 overall GPA required to take courses above the 300 level; 2.5 overall GPA to take Clinical Practicum (CD 559).			

TOTAL HOURS REQUIRED, 180

Corporate Journalism Major (JMC)

UNIVERSITY CORE

EH 110 English Composition	5	EH Adv. Comp. (p. 16)	5	EH 220-221 Grt. Bks. I & II	10
Core History (p. 16)	3-3-3	Core Mathematics (p. 16)	5	Core Fine Arts (p. 16)	3
U 101 Society & Culture	3	U 102 Political Economy	3	U 103 Indiv. & Society	3
Core Science (p. 16)	5	Core Science (p. 16)	5	Core Philosophy (p. 16)	5

COLLEGE CORE

FL Foreign Language	5-5-5
---------------------------	-------

MAJOR

Prerequisites: JM 101 and 111

JM 221 Beg. News Writing	5	JM 313 Reporting	5
JM 304 Intro. to PR	5	JM 314 Editing	3
JM 322 Feature Writing	5	JM 404 PR Case Studies	5
		One of the following:	
JM 423-423 Journalism Workshop	1-1	JM 425 Internship	4
		One of the following:	
JM 470 Freelance Feature Writing	3	JM 485 Adv. Reporting	3

Hours in major, 43-45 (excluding prerequisites).

SUPPORTING COURSES

At least 20 hours from the following:

JM 101 Newspaper Style	3	JM 111 Newspaper Lab.	1	COM 100 Prof. Comm.	3
AC 241 Bus. Law	5	MT 331 Prin. Mktg.	5	MT 332 Mkt. Comm. Mgt.	5
MT 341 Buyer Behavior	5	SOC 204 Soc. Behavior	5	SOC 507 Public Op. & Prop.	5
PG 201 Psychology	5	PG 358 Social Psychology	5	EC 202 Economics II	5
EH 404 Tech. Writing	5	EH 408 Bus. Writing	5	EH 416 Tech. & Prof. Editing	5
PQ 341 Pressure Groups	3	PQ 342 Politics/the Media	5		
		Two of the following courses:			
COM 250 Fnd. of Hum. Comm.	5	RTF 336 Television Prod.	5	RTF 338 Broad. Newswrit.	5
		Electives, 34-36 hours			

TOTAL HOURS REQUIRED, 192.

Criminal Justice Major (CJ)

UNIVERSITY CORE

EH 110 English Composition	5	EH 408 Bus. Writing	5	EH 220-221 Grt. Bks. I & II	10
Core History (p. 16)	3-3-3	Core Mathematics (p. 16)	5	Core Fine Arts (p. 16)	3
U 101 Society & Culture	3	U 102 Political Economy	3	U 103 Indiv. & Society	3
Core Science (p. 16)	5	Core Science (p. 16)	5	Core Philosophy (p. 16)	5

COLLEGE CORE

FL Foreign Language	5-5-5
---------------------------	-------

MAJOR

PO 210 St. & Loc. Gov't	5	PO 325 Intro. to PA	5	CJ 565 CJ Org. & Admin.	5
PO/CJ 260 Intro. Criminal Justice	5	CJ 335 Criminal Law	3	Any CR course	5
Two add. CJ courses	8-10	PO/CJ 504 or CJ 336	5 or 3	PO 333 or PA 492 or 504	3 or 5 or 5
		One of the following:		SOC 304 Minority Groups	5
SOC 202 Social Problems	5	SOC 301 Soc. of the Family	5	PG 356 Abnormal Psych.	5
SOC 360 Soc. Epidemiology	5	SOC 525 Seminar in Deviance	5		
PG 400 Psych. in CJ	5	HDF 267 Human Development	5		
		One of the following:		SOC 370 Methods	5
PO 300 Research Methods	5	SOC 220 Statistics	5		
PG 303 Research Methods	5	RSY 370 Methods	5		
		One of the following:		PA 504 Mod. Ethical Theories	5
PO 333 Admin. Resp.	3	PA 492 Philosophy of Law	5		

College of Liberal Arts

Courses selected from the following to bring the total number of CJ hours to 60.

Any CJ course	Any CR course	PO 330 Law & Conf. Res.	5
PO 332 Jud. Process	PO 390 Mediation	PO 501 Con. Law I	5
PO 502 Con. Law II	PO 503 Con. Law III	PO/CJ 504 Con. Law IV	5
CJ 336 Policy and Process			

At least three courses in major must be at the 400-level or above.

TOTAL HOURS REQUIRED FOR THE MAJOR, 60

SUPPORTING COURSES

COM 100 Prof. Comm.	3	SOC 201 Intro. Sociology	3
Electives, 38 (see departmental recommendations)			

TOTAL HOURS REQUIRED, 180

Criminology Major (CR)

UNIVERSITY CORE

EH 110 English Composition	5	EH Adv. Comp. (p. 16)	5	EH 220-221 Grt. Bks. I & II	10
Core History (p. 16)	3-3-3	Core Mathematics (p. 16)	5	Core Fine Arts (p. 16)	3
U 101 Society & Culture	3	U 102 Political Economy	3	U 103 Indiv. & Society	3
SM 101 or Core Science (p. 16)	5	Core Science (p. 16)	5	Core Philosophy (p. 16)	5

COLLEGE CORE

FL Foreign Language	5-5-5
---------------------	-------

MAJOR

SOC 201 Intro. to Sociology	3	CR 302 Criminology	5	CR 308 Juv. Delinq.	5
CR 450 Soc. Crim. Law	5	SOC 220 Statistics	5	SOC 370 Meth. Soc. Res.	5
CR 415 or 420	5	CR 426 or 530	5	SOC 409 or 502	5
Three of the following:					
CR 500 Serial & Mass Murder	5	CR 501 Drugs & Soc.	5	CR 510 Wom. in Crim. Just.	5
CR 515 Police & Soc.	5	CR 520 Victimology	5	CR 522 Special Topics	5
Two of the following:					
ANT 206 Cult. Anthropol.	5	PG 400 Psych. in CJ Sys.	5	SOC 304 Minority Groups	5
SW 375 Intr. Soc. Welfare	5	PO 504 Const. Law IV	5		
Hours in major, 68.					

SUPPORTING COURSES

COM 100 Prof. Comm.	3
---------------------	---

Other: A 20-hour concentration selected with advisor. Electives, 13 hours.

TOTAL HOURS REQUIRED, 180

Economics Major (ECLA)

UNIVERSITY CORE

EH 110 English Composition	5	EH Adv. Comp. (p. 16)	5	EH 220-221 Grt. Bks. I & II	10
Core History (p. 16)	3-3-3	Core Mathematics (p. 16)	5	Core Fine Arts (p. 16)	3
U 101 Society & Culture	3	U 102 Political Economy	3	U 103 Indiv. & Society	3
Core Science (p. 16)	5	Core Science (p. 16)	5	Core Philosophy (p. 16)	5

COLLEGE CORE

FL Foreign Language	5-5-5
---------------------	-------

MAJOR

EC 202 Economics I	5	EC 203 Economics II	5	EC 302 Intermed. Micro.	5
EC 554 Hist. Econ. Thought	5	EC 556 Intermed. Macro.	5		
plus 25 hours of economics courses at the 300-level or above. Hours in major, 50					

SUPPORTING COURSES

COM 100 Prof. Comm.	3
Electives, 63 hours.	

TOTAL HOURS REQUIRED, 192.

English Major (EH)

UNIVERSITY CORE

EH 110 English Composition	5	EH 400, 404 or 408	5	EH 220-221 Grt. Bks. I & II	10
Core History (p. 16)	3-3-3	Core Mathematics (p. 16)	5	Core Fine Arts (p. 16)	3
U 101 Society & Culture	3	U 102 Political Economy	3	U 103 Indiv. & Society	3
Core Science (p. 16)	5	Core Science (p. 16)	5	Core Philosophy (p. 16)	5

COLLEGE CORE

FL Foreign Language	5-5-5
---------------------	-------

MAJOR

EH 403 Interpreting Texts	5	EH 411 Intro. to Linguistics	5
and forty (40) additional credit-hours in English courses numbered 300 or above, at least thirty-five (35) of which must be in 400- or 500-level courses, and twenty (20) of which must be in a department-approved concentration. The department offers preset concentrations in literature, linguistics and rhetoric, creative writing and technical and professional writing; concentrations may also be individually designed. Hours in major, 50.			

Supporting Courses: 20 hours of course work at the 200-level or above in a subject of the student's choice.

Electives, 34 hours.

TOTAL HOURS REQUIRED, 180

Foreign Languages-International Trade Major (FRT, GRT, SPT)**UNIVERSITY CORE**

EH 110 English Composition	5	EH 406 Bus. Writing	5	EH 220-221 Grt. Bks. I & II	10
Core History (p. 16)	3-3-3	Core Mathematics (p. 16)	5	Core Fine Arts (p. 16)	3
U 101 Society & Culture	3	U 102 Political Economy	3	U 103 Indiv. & Society	3
Core Science (p. 16)	5	Core Science (p. 16)	5	Core Philosophy (p. 16)	5

COLLEGE CORE

FL	FR, GR or SP	5-5-5
----	--------------	-------

MAJOR

Includes completion of a major in French, German or Spanish. Also includes second and third years of the language and the following courses are required in the respective languages:

FR 321 Bus. French	3	GR 401 Bus. German	3	SP 320 Bus. Spanish	3
FR 421 French Inatl. Trade	4	GR 402 German Inatl. Trade	3	SP 321 Span. Inatl. Trade	3
SP 304 Composition	3	SP 305 Hispanic Lit.	3		

Hours in major, 45 in French and Spanish, 48 in German.

SUPPORTING COURSES

EC 200 Economics I	5	EC 202 Economics II	5	AC 211 Intr. Acct. I	4
AC 212 Intr. Acct. II	4	CSE 100 PC Apps.	3	MT 331 Prin. Mkt.	5
MN 310 Prin. Mgt.	5	FI 361 Prin. Fin.	5	EC 571 Inatl. Econ.	5
FI 451 Multinatl. Fin. Mgt.	5	COM 100 Prof. Comm.	3		

and five hours from any upper-division course related to business and approved by the advisor.

Electives, Variable depending on major.

TOTAL HOURS REQUIRED, 192

French Major (FR)**UNIVERSITY CORE**

EH 110 English Composition	5	EH Adv. Comp. (p. 16)	5	EH 220-221 Grt. Bks. I & II	10
Core History (p. 16)	3-3-3	Core Mathematics (p. 16)	5	Core Fine Arts (p. 16)	3
U 101 Society & Culture	3	U 102 Political Economy	3	U 103 Indiv. & Society	3
Core Science (p. 16)	5	Core Science (p. 16)	5	Core Philosophy (p. 16)	5

COLLEGE CORE

FR	101-102-103	5-5-5
----	-------------	-------

MAJOR

FR 201-202-203 Second-Yr. French	5-5-5	FR 301 Conversation	3
FR 302 Composition	3	FR 303 Civilization	3

and twenty-one (21) additional credit hours from courses numbered 300 or above. Hours in major, 45.

SUPPORTING COURSES

COM 100 Prof. Comm.	3
Electives, 56 hours.	

TOTAL HOURS REQUIRED, 180

Geography Major (GY)**UNIVERSITY CORE**

EH 110 English Composition	5	EH Adv. Comp. (p. 16)	5	EH 220-221 Grt. Bks. I & II	10
Core History (p. 16)	3-3-3	Core Mathematics (p. 16)	5	Core Fine Arts (p. 16)	3
U 101 Society & Culture	3	U 102 Political Economy	3	U 103 Indiv. & Society	3
Core Science (p. 16)	5	Core Science (p. 16)	5	Core Philosophy (p. 16)	5

COLLEGE CORE

FL	Foreign Language	5-5-5
----	------------------	-------

MAJOR

GY 214 Intr. Phys. Geog.	5	GY 215 Intr. Hum. Geog.	5	GY 223 Field Geog.	5
GY 240 Intr. Cartography	5	GY 500 Research Techniques	5		

and thirty (30) additional hours, 25 of which must be at the 300-level or above. Hours in major, 55.

SUPPORTING COURSES

COM 100 Prof. Comm.	3
Other: Electives, 46 hours.	

TOTAL HOURS REQUIRED, 180

German Major (GR)**UNIVERSITY CORE**

EH 110 English Composition	5	EH Adv. Comp. (p. 16)	5	EH 220-221 Grt. Bks. I & II	10
Core History (p. 16)	3-3-3	Core Mathematics (p. 16)	5	Core Fine Arts (p. 16)	3
U 101 Society & Culture	3	U 102 Political Economy	3	U 103 Indiv. & Society	3
Core Science (p. 16)	5	Core Science (p. 16)	5	Core Philosophy (p. 16)	5

COLLEGE CORE

GR	101-102-103	5-5-5
----	-------------	-------

College of Liberal Arts

MAJOR

GR 201 Intermediate German	4	GR 202 Intermediate German	4	GR 203 Intermediate German	4
GR 301 Beg. Comp. & Conv.	3	GR Intermed. Comp. & Conv.	3	GR Adv. Comp. & Conv.	3
GR 311 German Civ. I	3	GR German Civ. II	3	GR 313 Intro. Literature	3

Additional 18 credit hours in courses at 300-level or above.

SUPPORTING COURSES

COM 100 Prof. Comm.	3
Electives, 53 hours.	

TOTAL HOURS REQUIRED, 180

Health Services Administration Major (HSA)

UNIVERSITY CORE

EH 110 English Composition	5	EH 408 Business Writing	5	EH 220-221 Grt. Bks. I & II	10
HY 101-102-103 (p. 16)	9	MH 160 Pre-Calculus	5	Core Fine Arts (p. 16)	3
U 101 Society & Culture	3	U 102 Political Economy	3	U 103 Indiv. & Society	3
BI 105 Perspectives	5	BI 106 Human Biology	5	PA Ethics & Health	5

COLLEGE CORE

FL Foreign Language	15
---------------------------	----

MAJOR

HA 320 Health Policy	5	HA 360 Intro. Health Ad.	5	HA 361 Health Law	3
HA 370 Health Community	3	HA 450 Internship	10	HA 451 Int. Readings	5
HA 500 Health Care Org.	3	HA 510 HA Finance	3	AC 211 Accounting I	4
AC 212 Accounting II	4	CSE 100 Personal Computers	3	SOC 577 Medical Soc.	5
		VED 352 Medical Term.	5		

Two of the following:

HA 530 Regulation	3	HA 531 Medical Technology	3
HA 532 Long-Term Care	3	HA 539 Topics	3

One of the following:

PO 209 U.S. Government	5	PO 210 State and Local Government	5
PO 326 Organizational Theory	5	PG 359 Industrial Psychology	5

One of the following:

AC 213 Cost & Budget	4	PO 514 Financial Administration	3
MN 314 Intro MIS	2	VED 305 Records Management	3

One of the following:

SOC 220 Statistics	5	RSY 220 Statistics	5	MN 301 Bus. & Econ. Statistics	3
		Hours in Major, 84-86.			
		Electives, 27-29 hours.			

TOTAL — 189 QUARTER HOURS

OPTIONAL CERTIFICATES OF CONCENTRATION

FINANCE (23 HOURS)

AC 311 Inter. Accounting I	5	AC 312 Inter. Accounting II	5	EC 202 Economics II	5
HA 539 Topics: Finance	3	FI 361 Prin. of Bus. Finance	5		

LONG-TERM CARE (22 HOURS)

HA 532 Long-Term Care	3	HA 550 Special Problems	3-5	SOC 201 Intro. Sociology	5
-----------------------------	---	-------------------------------	-----	--------------------------------	---

Three of the following:

HDF 477 Family and Aging	5	SOC 477 Soc. of Aging	3
SW 375 Intro. to Social Welfare	5	SW 385 Aging Issues & Services	2-5

Other courses approved by HA advisor.

History Major (HY)

UNIVERSITY CORE

EH 110 English Composition	5	EH Adv. Comp. (p. 16)	5	EH 220-221 Grt. Bks. I & II	10
HY 101-102-103 World History	or	Core Mathematics (p. 16)	5	Core Fine Arts (p. 16)	3
HY 121-122-123 Tech. & Civ.	3-3-3	U 102 Political Economy	3	U 103 Indiv. & Society	3
U 101 Society & Culture	3	Core Science (p. 16)	5	Core Philosophy (p. 16)	5
Core Science (p. 16)	5				

COLLEGE CORE

FL Foreign Language	5-5-5
---------------------------	-------

MAJOR

One of these pairs of courses:

HY 201 and 202 History of U.S.	5-5	or	HY 207 and 208 European History	5-5
HY 405 Hist. Res. & Writing	3		HY 406 Hist. Res. & Writing II	3

A minimum of 34 additional hours of history courses, 15 hours of which must be at the 500-level. Hours in major, 50.

SUPPORTING COURSES

COM 100 Prof. Comm.	3
Other: Electives, 63 hours.	

TOTAL HOURS REQUIRED, 192

Journalism Major (JM)**UNIVERSITY CORE**

EH 110 English Composition	5	EH 400 Adv. Comp.	5	EH 220-221 Grt. Bks. I & II	10
Core History (p. 16)	3-3-3	Core Mathematics (p. 16)	5	Core Fine Arts (p. 16)	3
U 101 Society & Culture	3	U 102 Political Economy	3	U 103 Indiv. & Society	3
Core Science (p. 16)	5	Core Science (p. 16)	5	Core Philosophy (p. 16)	5

COLLEGE CORE

FL Foreign Language	5-5-5
---------------------------	-------

MAJOR

Prerequisites: JM 101 and 111.

JM 221 Beginning Newswriting	5	JM 313 Reporting	5	JM 314 Editing	3
JM 321 Newspaper Design	5	JM 322 Feature Writing	5	JM 323 Newspaper Mgmt.	5
JM 421 Photo-Journalism	5	JM 465 Hist. & Prin. Journalism ..	5	JM 422-423 JM Workshop	1-1
				or	
				JM 425 Journalism Internship	4

One of the following:

JM 470 Freelance Feature Writing	3	JM 485 Advanced Reporting	3
--	---	---------------------------------	---

Hours in major, 43-45 (excluding prerequisites).

SUPPORTING COURSES

COM 100 Prof. Comm.	3	PO 342 Politics & Media	5
JM 101 Newspaper Style	3	JM 111 Newspaper Lab.	1

Electives, 59-61 hours.

TOTAL HOURS REQUIRED, 192**Latin American Studies (GYL, HYL, POL, SPL)****UNIVERSITY CORE**

EH 110 English Composition	5	EH Adv. Comp. (p. 16)	5	EH 220-221 Grt. Bks. I & II	10
Core History (p. 16)	3-3-3	Core Mathematics (p. 16)	5	Core Fine Arts (p. 16)	3
U 101 Society & Culture	3	U 102 Political Economy	3	U 103 Indiv. & Society	3
Core Science (p. 16)	5	Core Science (p. 16)	5	Core Philosophy (p. 16)	5

COLLEGE CORE

SP 101-102-103	5-5-5
----------------------	-------

MAJOR

The student will complete the requirements of one major and one concentration (see below) in Spanish, Geography, History, or Political Science. The requirements for a regular major in one of the participating departments must be fulfilled. At least 18 hours from the following courses should be included as part of the disciplinary major:

Spanish:

SP 301 Phonetics	3	SP 302 Syntax	3	SP 303 Conversation	3
SP 304 Composition	3	SP 305 Intr Hispanic Lit.	3	SP 313-314-315 S.A. Civ.	9
SP 413-414-415 Sp. Am. Lit.	9	SP 501 Comp & Stylistics	3	SP 502 Conv. & Phonetics	3

Geography:

GY 302 Economic Geog.	5	GY 304 Geog. Latin America	3	GY 401 Geog. Internat. Rel.	5
GY 505 Geog. Internat. Dev.	5	GY 507 Res. & Envir.	5		

History:

HY 300 Cent. Amer.	3	HY 355 Iberia	5	HY 552 Cent. Amer. & Carib.	5
HY 553 S. Amer. to 1800	5	HY 554 Mexico	5	HY 555 S. Amer. since 1800	5

Political Science:

PO 309 Internat. Relations	5	PO 311 Internat. Org.	5	PO 312 Comp. Gov't.	5
PO 318 Latin Amer. & U.S.	5	PO 535 Cont. Internat. Politics	5	PO 539 Gov. & Pol. Lat. Amer.	5
PO 540 Internat. Law	5				

Hours in major, 45 minimum, determined by area.

SUPPORTING COURSES

COM 100 Prof. Comm.	3	SP 201-202-203 Spanish II	4-4-4
--------------------------	---	---------------------------------	-------

The student will complete a concentration in one of the participating departments not serving as the major area. The concentration will consist of 20 hours, to be drawn from the above list of courses for the major option.

Electives: 21 minimum.

TOTAL HOURS REQUIRED, 192**Mass Communication Major (RTF)****UNIVERSITY CORE**

EH 110 English Composition	5	EH Adv. Comp. (p. 16)	5	EH 220-221 Grt. Bks. I & II	10
Core History (p. 16)	3-3-3	Core Mathematics (p. 16)	5	Core Fine Arts (p. 16)	3
U 101 Society & Culture	3	U 102 Political Economy	3	U 103 Indiv. & Society	3
SM 101 or Core Science (p. 16)	5	Core Science (p. 16)	5	Core Philosophy (p. 16)	5

COLLEGE CORE

FL Foreign Language	5-5-5
---------------------------	-------

MAJOR

COM 100 Prof. Comm.	3	RTF 330 Found. of Mass Comm. ..	5	COM 350 Found. of Human Comm. ..	5
COM 360 Found. of Rhetoric	5	RTF 439 Internship	3 or 6		
		One of the following:			
RTF 234 Radio Prod.	5	RTF 236 Tele. Prod.	5	RTF 237 Elect. Vid. Prod.	5

College of Liberal Arts

One of the following:

RTF 335 Writing for Radio/TV/Film	5	RTF 336 Broadcast Newswriting	5
Twenty hours from the following:			
RTF 235 Intro. to Film Studies	5	RTF 430 Rad./TV Pro. St.	5
RTF 432 Broad. Mgt.	5	RTF 433 Media Law/Reg.	5
RTF 436 Cinema/Society	5	RTF 437 New Technol.	5
RTF 420 Hy. of Amer. Broadcast ...	5	RTF 421 Cult. & Mass Comm.	5

Hours in major, 51-54.

Note: COM 350, 360 and RTF 330 are prerequisites for all 400-level departmental courses in all COM sequences.

SUPPORTING COURSES

30 hours must be taken in one or 15 hours in each of two cognate areas outside the department and approved by advisor.
Electives, 20 or 23 hours.

TOTAL HOURS REQUIRED, 180

Music Major (MULA)

UNIVERSITY CORE

EH 110 English Composition	5	EH Adv. Comp. (p. 16)	5	EH 220-221 Grt. Bks. I & II	10
Core History (p. 16)	3-3-3	Core Mathematics (p. 16)	5	Core Fine Arts (AT or TH) (p. 16)	3
U 101 Society & Culture	3	U 102 Political Economy	3	U 103 Indiv. & Society	3
Core Science (p. 16)	5	Core Science (p. 16)	5	Core Philosophy (p. 16)	5

COLLEGE CORE

FL Foreign Language

MAJOR

Prerequisites: MU 131-132-133 Mat. & Org. (5-5-5) and MUA 184 Performance (6).		MU 251-252-253 Music Lit.	1-1-1	MU 331-332-333 Mat. & Org. , 3-3-3	
MU 231-232-233 Mat. & Org. . 5-5-5		MU 361 Conducting	2	MU 384 Performance	6
MU 351-352-353 Music Hist. .. 3-3-3		MU 020 Soph. Comp.	0	MU 040 Senior Project	0
MU Perf. Ensemble	6				
MU 100 Perf. Attend. (quarterly) ...	0				

Hours in major, 71 (including pre-requisites).

Other: Electives, 33 hours.

TOTAL HOURS REQUIRED, 180

Philosophy Major (PA)

UNIVERSITY CORE

EH 110 English Composition	5	EH Adv. Comp. (p. 16)	5	EH 220-221 Grt. Bks. I & II	10
Core History (p. 16)	3-3-3	Core Mathematics (p. 16)	5	Core Fine Arts (p. 16)	3
U 101 Society & Culture	3	U 102 Political Economy	3	U 103 Indiv. & Society	3
Core Science (p. 16)	5	Core Science (p. 16)	5	PA 101 Intro. to Logic	5

COLLEGE CORE

FL Foreign Language

MAJOR

PA 102 Intro. to Ethics	5				
Also 15 hours in history of philosophy which shall be met by taking:		PA 334 Late Med./Early Mod.	5	PA 335 Recent/Contemp.	5
PA 333 Ancient/Early Med.	5				

or by taking any two of the above plus one 5-hour course substitution drawn from approved alternatives and allowed in consultation with the department chair. The student will choose 35 additional hours, at least 25 hours of which must be at or above the 300 level and at least 15 hours of which must be at the 400 or 500 levels. Hours in major, 55.

SUPPORTING COURSES

COM 100 Prof. Comm. 3

Other: Electives, 58 hours.

TOTAL HOURS REQUIRED, 192

Political Science Major (PO)

UNIVERSITY CORE

EH 110 English Composition	5	EH Adv. Comp. (p. 16)	5	EH 220-221 Grt. Bks. I & II	10
Core History (p. 16)	3-3-3	MH 160 Pre-Calculus	5	Core Fine Arts (p. 16)	3
U 101 Society & Culture	3	U 102 Political Economy	3	U 103 Indiv. & Society	3
Core Science (p. 16)	5	Core Science (p. 16)	5	Core Philosophy (p. 16)	5

COLLEGE CORE

FL Foreign Language

MAJOR

PO 209 Intro. to American Govt. ..	5	PO 300 Polit. Sci. Res. Meth.	5	Political Thought Course	5
and COM 100 Prof. Communication (3) or COM 141 or 311 or PO course with oral presentation requirement approved by the Political Science advisor.					

One Political Science course in three of the following areas: Comparative Politics, Public Law and Conflict Resolution, International Relations and Public Administration

Three additional Political Science courses in one of the following specializations, including one course at the 400 or 500-level: American Politics, Comparative Politics, International Relations, Public Law and Conflict Resolution, Public Administration.

College of Liberal Arts

Readings courses and internship courses may count toward the major, but they do not meet the distribution and specialization requirements outlined above. 9-15

Additional PO electives to total 53 hours 3-20

Free Electives, 46-51 hours.

TOTAL HOURS REQUIRED, 180

Psychology Major (PG)

FRESHMAN YEAR

EH 110 English Composition	5	Core Philosophy (p. 16)	5	Core Mathematics (p. 16)	5
FL First Year	5	FL First Year	5	FL First Year	5
Core History (p. 16)	3	Core History (p. 16)	3	Core History (p. 16)	3
U 101 Society & Culture	3	U 102 Political Economy	3	U 103 Indiv. & Society	3

SOPHOMORE YEAR

SM 101 or Core Science	5	EH 220 Great Books I	5	EH 221 Great Books II	5
COM 100 Prof. Comm.	3	Core Science (p. 16)	5	PG 303 Res. Meth. in Psych.	5
		PG 201 Intro. to Psych.	5	Elective	3
		Core Fine Arts (p. 16)	3		

JUNIOR YEAR

PG 304 Quant. An. in Psych.	5	PG 352 Learning	5	PG Major	5
PG Major	5	PG Major	5	EH Adv. Comp. (p. 16)	5
Elective	5	Elective	3	Elective	3
		Elective	3	Elective	3

SENIOR YEAR

PG Major	5	PG Major	5	PG Major	5
PG Major	5	PG Major	5	Elective	5
Elective	5	Elective	5	Elective	5

All majors will include PG 201, 303, 304 and 352, plus at least seven at the 300-500 level. Hours in major, 55.

TOTAL HOURS REQUIRED, 192

Public Administration Major (PUB)

UNIVERSITY CORE

EH 110 English Composition	5	EH Adv. Comp. (p. 16)	5	EH 220-221 Grt. Bks. I & II	10
Core History (p. 16)	3-3-3	Core Mathematics (p. 16)	5	Core Fine Arts (p. 16)	3
U 101 Society & Culture	3	U 102 Political Economy	3	U 103 Indiv. & Society	3
SM 101 or Core Science (p. 16) ..	5	Core Science (p. 16)	5	Core Philosophy (p. 16)	5

COLLEGE CORE

FL Foreign Language	5-5-5
---------------------------	-------

MAJOR

PO 300 Research Methods	5	PO 325 Intro. to Public Admin.	5	PO 326 Theory of Public Org.	5
PO 327 Policy Process	5	PO 514 Financial Admin.	5	PO 515 Pub. Personnel Admin.	3
		30 hours from the following:			
PO 323 Municipal Gov't in U.S.	5	PO 333 Admin. Responsibility	3	PO 505 Metro. Area Gov't.	3
PO 328 Government & Economy ..	5	PO 518 Admin. Law	5	PO 519 Prob. in Pub. Admin.	5
PO 501-502-503-504 (one)	5	PO 517 Labor Rel. Public Org.	3		
		Hours in major, 58.			

SUPPORTING COURSES

PO 210 State & Local Gov't.	5	COM 100 Prof. Comm.	3	CSE Personal Computer Apps	3
		20 hours outside Political Science chosen in consultation with advisor.			
		Other: Electives, 15 hours.			

TOTAL HOURS REQUIRED, 180

Public Relations Major (PR)

UNIVERSITY CORE

EH 110 English Composition	5	EH Adv. Comp. (p. 16)	5	EH 220-221 Grt. Bks. I & II	10
Core History (p. 16)	3-3-3	Core Mathematics (p. 16)	5	Core Fine Arts (p. 16)	3
U 101 Society & Culture	3	U 102 Political Economy	3	U 103 Indiv. & Society	3
Core Science (p. 16)	5	Core Science (p. 16)	5	Core Philosophy (p. 16)	5

COLLEGE CORE

FL Foreign Language	5-5-5
---------------------------	-------

MAJOR

RTF 330 Fnd. of Mass Comm.	5	COM 350 Fnd. of Hum. Comm.	5	COM 360 Fnd. of Rhet. & Soc.	5
PR 304 Intro. to PR	5	COM 311 Persuasive Discourse ..	5	PR 402 PR Camps./Ethics	5
PR 404 Case Studies in PR	5	PR 408 PR Writing & Res.	5	RTF 439 Internship	3 or 6
COM 451 Rsrch. Meth. in Comm.	5	COM 100 Prof. Comm.	3		
		One of the following:			
RTF 234 Radio Prod.	5	RTF 236 TV Prod.	5	RTF 237 Elect. Field Prod.	5
		Two of the following:			
RTF 335 Writ. for TV/Radio/Film	5	RTF 338 Broadcast Newswriting	5	COM 340 Comm. Organ.	5
		Hours in major, 66 or 69.			

College of Liberal Arts

SUPPORTING COURSES

JM 101 Newspaper Style 3			JM 314 Copyread. & Edit. 3		
and 3 courses from the following:					
JM 221 Beg. Newswrit. 5	JM 313 Reporting 5				
JM 321 Newsw. Design 5	JM 322 Feature Writing 5				
and 4 courses from the MT & PQ group or 3 courses from MN.					
MT 331 Prin. Mkt. 5	MT 332 Mkt. Comm. Mgt. 5	MT 341 Buyer Behavior 5			
MT 432 Promotional Strategy 5	MT 433 Retail Store Mgt. 5	MT 440 International Marketing 5			
EC 202 (or AEC 202) 5					

Note: COM 350, 360 and RTF 330 are prerequisites for all 400-level departmental courses in all COM sequences.
Electives, 5 or 14 hours.

TOTAL HOURS REQUIRED, 192

Religion Major (RL)

UNIVERSITY CORE

EH 110 English Composition 5	EH Adv. Comp. (p. 16) 5	EH 220-221 Grt. Bks. I & II 10
Core History (p. 16) 3-3-3	Core Mathematics (p. 16) 5	Core Fine Arts (p. 16) 3
U 101 Society & Culture 3	U 102 Political Economy 3	U 103 Indiv. & Society 3
Core Science (p. 16) 5	Core Science (p. 16) 5	PA 101 Intro. to Logic 5

COLLEGE CORE

FL Foreign Language 5-5-5	
---------------------------------	--

MAJOR

RL 201 Intr. to Religion 3	RL 303 East. Religions or 304 West. Religions 5
----------------------------------	---

and 37 additional hours, 25 hours of which must be at the 300-level or above. Hours in major, 45. Electives, 71 hours.

TOTAL HOURS REQUIRED, 192

Social Work Major (SW)

The Bachelor of Arts in Social Work degree is fully accredited by the Council on Social Work Education. A person with a degree from an accredited institution is eligible to take the examination for licensure as a baccalaureate-level social worker (LBSW) and apply for advanced standing in social work graduate programs.

UNIVERSITY CORE

EH 110 English Composition 5	EH Adv. Comp. (p. 16) 5	EH 220-221 Grt. Bks. I & II 10
Core History (p. 16) 3-3-3	Core Mathematics (p. 16) 5	Core Fine Arts (p. 16) 3
U 101 Society & Culture 3	U 102 Political Economy 3	U 103 Indiv. & Society 3
BI 105 Persp. in Biology 5	BI 106 Human Biology 5	PA 218 Ethics & Health 5

COLLEGE CORE

FL For. Lang. (SP recommended) 5-5-5	
--------------------------------------	--

MAJOR

Admission to the program required before enrolling in SW 506 and higher-numbers courses. Courses SOC 201, SW

320 and 375 must be completed with a grade of C or better prior to application.		
SOC 201 Intro. to Sociology 3	SW 320 Field Practicum 4	SW 375 Intro. to Social Welfare 5
SW 376 Com. Social Services 5	SW 380 Hm. Behav. Soc. Env. I .. 5	SW 381 Hm. Behav. Soc. Env. II .. 5
SW 506 Social Work Methods I 5	SW 507 Social Work Methods II ... 5	SW 508 Social Work Methods III ... 3
SW 575 Soc. Welfare Policy 5	SW 420 SW Field Placement 15	

Hours in major, 60.

SUPPORTING COURSES

ANT 201 Cultural Framework 3	PG 212 Dev. Psychology 5	COM 100 Prof. Comm. 3
SOC 220 Statistics 5	SOC 304 Minority Groups 5	
SOC 370 Meth. of Social Research 5	RSY 362 Community Organization 4	

Electives, 14 hours.

TOTAL HOURS REQUIRED, 180

Sociology Major (SOC)

UNIVERSITY CORE

EH 110 English Composition 5	EH Adv. Comp. (p. 16) 5	EH 220-221 Grt. Bks. I & II 10
Core History (p. 16) 3-3-3	Core Mathematics (p. 16) 5	Core Fine Arts (p. 16) 3
U 101 Society & Culture 3	U 102 Political Economy 3	U 103 Indiv. & Society 3
Core Science (p. 16) 5	Core Science (p. 16) 5	Core Philosophy (p. 16) 5

COLLEGE CORE

FL Foreign Language 5-5-5	
---------------------------------	--

MAJOR

ANT 200 Biosocial Backgmd. 3	ANT 201 Cult. Framework 3	SOC 201 Intr. Sociology 3
SOC 203 Population & Society 5	SOC 220 Statistics 5	SOC 370 Social Research 5
	One of the following:	
SOC 409 Social Thought 5	SOC 411 Social Change 5	SOC 502 Social Theory 5
	One of the following:	
SOC 304 Minority Groups 5	SOC 520 Racial/Ethnic Rel. 5	ANT 313 Status of Women 5
CR 510 Wom. in CJ Sys. 5	SOC 511 Third World Develop. 5	SOC 515 Social Stratification 5
	One of the following:	
SOC 301 Sociology of the Family 5	SOC 478 Seminar in Sociology of the Law 5	
SOC 509 Sociology of Religion 5	SOC 577 Seminar in Medical Sociology 5	

College of Liberal Arts

SOC 202 Social Problems	5	One of the following:		SOC 525 Social Deviance	5
CR 302 Criminology	5	CR 477 Sociology of Aging	3	CR 501 Drugs & Society	5
		CR 308 Juvenile Delinquency	5		
		One of the following:			
SOC 204 Social Behavior	5	SOC 534 Socialization	5		
		One of the following:			
SOC 504 Sociology of Power	5	SOC 505 Urban Sociology	5	SOC 507 Pub. Opinion & Prop.	5
SOC 508 Industrial Sociology	5	SOC 518 Soc. of Occupations	5	RSY Elective	5
SOC/ANT/RSY	6-8				

Total hours in major: 60

SUPPORTING COURSES

Concentration of 20 hours approved by advisor.

COM 100 Prof. Comm. 3

Other: Electives, 21 hours.

TOTAL HOURS REQUIRED, 180

Spanish Major (SP)

UNIVERSITY CORE

EH 110 English Composition	5	EH Adv. Comp. (p. 16)	5	EH 220-221 Grt. Bks. I & II	10
Core History (p. 16)	3-3-3	Core Mathematics (p. 16)	5	Core Fine Arts (p. 16)	3
U 101 Society & Culture	3	U 102 Political Economy	3	U 103 Indiv. & Society	3
Core Science (p. 16)	5	Core Science (p. 16)	5	Core Philosophy (p. 16)	5

COLLEGE CORE

SP 101-102-103 5-5-5 |

MAJOR

SP 201-202-203 Int. Span.	4-4-4	SP 301 Phonetics	3	SP 302 Syntax	3
SP 303 Conversation	3	SP 304 Composition	3	SP 305 Intro. Hispanic Lit.	3

and 18 additional credit hours in courses numbered 300 or above. Hours in major, 45.

SUPPORTING COURSES

COM 100 Prof. Comm. 3

Other: Electives, 56 hours.

TOTAL HOURS REQUIRED, 180

Theatre Major (THLA)

UNIVERSITY CORE

EH 110 English Composition	5	EH 400 Adv. Comp. (p. 16)	5	EH 220-221 Grt. Bks. I & II	10
Core History (p. 16)	3-3-3	Core Mathematics (p. 16)	5	Core Fine Arts (AT or MU) (p. 16) ..	3
U 101 Society & Culture	3	U 102 Political Economy	3	U 103 Indiv. & Society	3
Core Science (p. 16)	5	Core Science (p. 16)	5	Core Philosophy (p. 16)	5

COLLEGE CORE

FL Foreign Language 5-5-5 |

MAJOR

TH 200 Intro. to Acting	3	TH 231 Theatre Technology I	3	TH 240 Theatrical Design	3
TH 261 Costume Construction	3	TH 265 Stage Makeup	3	TH 271 Play Analysis	3
TH 272 Dramatic Literature	3	TH 284 Dance Techniques	2	TH 321 Directing Fundamentals ..	3
TH 371 History of Theatre I	3	TH 372 History of Theatre II	3	TH 373 History of Theatre III	3
TH Theatre Electives	13	TH 300 Theatre Lab.	12		

Hours in major, 60.

Electives, 56 hours.

TOTAL HOURS REQUIRED, 192

School of Fine Arts

In all Fine Arts curricula, the student is to complete two designated writing reinforcement courses during the junior and senior years. Electives may include six hours Basic ROTC and six hours Advanced ROTC. In curricula which do not provide sufficient electives for this purpose, ROTC may be taken in lieu of required courses not in the University core to be selected with help of departmental advisor.

Symbols for Fine Arts Curricula: Art (AT), Music (MU), Theatre (TH)

Department of Art

The Visual Arts curriculum offers two options: In Visual Communications it prepares students to become graphic designers, illustrators, advertising artists and art directors. In Fine Arts it prepares students to become painters, sculptors, printmakers and ceramicists. Both program options lead to the Bachelor of Fine Arts degree. The programs of studio courses are combined with study of the historical and cultural background of the visual arts. Courses

in general education promote an understanding of the artist's roles and responsibilities in society. A structured program of fundamentals and intermediate courses precedes advanced courses in which students work independently with the guidance of instructors.

The Visual Communications program gives fundamental training in the techniques of graphic design and related areas of visual communication. It is strongly reinforced with courses in painting, drawing, printmaking, sculpture, ceramics and art history. In the Fine Arts program, students preparing themselves as practicing artists or artist-teachers may concentrate entirely upon the offerings in the traditional fine arts media. Students planning to teach at the college level need to secure a Master of Fine Arts degree at this or another institution.

The Visual Arts curriculum may be divided into three general categories: academic courses, studio courses and courses in art history. Studio courses are divided into three progressive group levels. The first year is made up of visual art fundamentals. The second and third years contain classes in basic traditional media in which the student learns technical procedures and develops the disciplines necessary to self expression in the third and fourth year areas of concentration. The third and fourth year areas include visual design and illustration, or drawing, painting, printmaking, sculpture and ceramics.

The department offers a limited number of courses for education majors specializing in art, and for students in other fields who seek general knowledge and appreciation of the visual arts.

The Department of Art is an accredited member of the National Association of Schools of Art and Design, and a member of the College Art Association.

Transfer

All course work to be considered for transfer credit should be the equivalent of work required in the Visual Arts curriculum at Auburn. Art studio course credit earned (C or better) will be considered for advanced standing if a complete portfolio of work is submitted to the Auburn Art Department for evaluation. If the examples do not approximate Auburn's requirements, then credit may be given for an art studio elective. If the quality of work is not acceptable, credit may be given for an open elective. Transfer students are advised that their degrees may require more than a total of four years because of the professional nature of Auburn's curriculum, the sequential arrangement of its courses, and heavy demands for enrollment.

Graduate Study in Fine Arts

Students who hold the degree of Bachelor of Fine Arts, or a similar degree, are eligible to apply to the Dean of the Graduate School for admission to the graduate program leading to the Master of Fine Arts degree. For details examine the Graduate School section of this *Bulletin*.

Curriculum in Art

FRESHMAN YEAR			
AT 111 Fundamentals	4	AT 112 Fundamentals	4
AT 121 Fundamentals	4	AT 122 Fundamentals	4
AT 171 History of Art	3	AT 172 History of Art	3
EH 110 Eng. Comp.	5	Core Philosophy (p. 16)	5
		Core History (p. 16)	3
		Core Fine Arts (MU or TH, p. 16)	3
SOPHOMORE YEAR			
AT 211 Basic Fig. Dwg.	4	AT 212 Fig. Constrn.	4
AT Group A Studio	4	AT Group A Studio	4
EH 220 Great Books I	5	EH 221 Great Books II	5
Core History (p. 16)	3	Core History (p. 16)	3
		AT 213 Fig. Drawing	4
		AT Group A Studio	4
		AT Art History	3
		Core Mathematics (p. 16)	5
JUNIOR YEAR			
AT Group A Studio	4	AT Group A Studio	4
AT A or B Studio	4	AT A or B Studio	4
AT Art History	3	AT Art History	3
Core Science (p. 16)	5	Core Science (p. 16)	5
		EH Adv. Comp. (p. 16)	5
SENIOR YEAR			
AT A or B Studio	4	AT Group B Studio	4
AT Group B Studio	4	AT Studio or AT HY	4
AT Studio or AT HY	4	AT Studio or AT HY	4
U 101 Soc., Cult. & Env.	3	U 102 Political Economy	3
Free Elective	3	U 103 Indiv. & Society	3
TOTAL - 195 HOURS			

GROUP A STUDIO

Figure Drawing: AT 211 Basic, AT 212 Construction, AT 213.

Drawing: AT 214, 215, 216.

Visual Communications: AT 221 Graphic Processes, AT 222 Design Systems, AT 223 Graphic Formats, AT 321 Photodesign, AT 322 Photocommunication, AT 323 Typographics, AT 324 Electronic Graphic Design.

Painting: AT 231-331 Oil, AT 232-332 Watercolor, AT 233-333 Acrylic.
Printmaking: AT 241-341 Relief, AT 242-342 Intaglio, AT 243-343 Lithography.
Sculpture: AT 251-351 Clay, AT 252-352 Wood, AT 253-353 Stone.
Ceramics: AT 255-355.

GROUP B STUDIO

Visual Design: AT 424-425-426.

Advanced Painting/Drawing: AT 434-435-436.

Advanced Printmaking: AT 444-445-446.

Advanced Sculpture: AT 454-455-456.

Advanced Ceramics: AT 457-458-459.

Illustration: AT 464-465-466.

Prerequisites: 18 hours of art history, a 2.25 average in the three 200-level Figure Drawing courses, and minimum requirements listed below, or a portfolio acceptable to an appropriate faculty committee in student's proposed area of concentration.

AT 424-425-426 Visual Design I, II, III 2.25 average in 200-level Visual Comm.

AT 434-435-436 Adv. Painting/Drawing I, II, III 2.25 average in 200-level Painting

AT 444-445-446 Adv. Printmaking I, II, III 2.25 average in 200-level Printmaking

AT 454-455-456 Adv. Sculpture I, II, III 2.25 average in 200-level Sculpture

AT 457-458-459 Adv. Ceramics I, II, III 2.25 average in 200-level Ceramics

AT 464-465-466 Illustration I, II, III 2.25 average in 200-level Visual Comm.

Department of Music

The Department of Music provides instruction and performing experience to students interested in developing their talents in music. The courses of study provided by the Department have been created to present a balance between creative skills and academic studies, allowing at the same time a certain flexibility to meet individual requirements.

The Department of Music offers the Music major a professional curriculum leading to the Bachelor of Music degree, with tracks in Performance, Composition, Piano Pedagogy, or — when available — Jazz Studies. These programs provide preparation for the professional field of performance and for private or college teaching of applied music and composition. They also provide training for church organists and choir directors.

Students pursuing the Bachelor of Music Education degree will register through the College of Education.

For the student wishing to major in Music History and Literature, the Department of Music offers a program of studies leading to the Bachelor of Arts degree. This is a cultural, not a professional, degree. See "Music Major" in the Liberal Arts Curriculum.

All music majors must perform an entrance audition and take a placement examination in music theory. Non majors will be asked to audition for placement in private instruction. Certain performing groups will require auditions as well.

Private instruction is generally available to all university students in band and orchestral instruments, guitar, voice, piano and organ. Performance groups, such as the Marching and Concert Bands, Orchestra, University Singers, Concert Choir, Women's Chorus and Men's Chorus, Opera Workshop and various instrumental ensembles, are also available to students in all curricula.

In each curriculum track six hours of Basic and six hours of Advanced ROTC may be scheduled in lieu of 12 hours of general electives.

Graduate Work in Music

Admission to graduate work toward the Master of Music Degree requires a Bachelor's degree in music, music education, or the equivalent from this or another recognized institution. Admission to graduate study in the Music Department shall be in accordance with policies of the Graduate School. In addition, all candidates must take entrance examinations in music theory and history administered by members of a Departmental Screening Committee, demonstrate competency at the keyboard, and fulfill additional requirements as follows:

Instrumental Majors - Audition

Voice Majors - Audition and demonstration of satisfactory diction in Italian, French and German.

Choral Conducting Majors - Interview

Music Organizations

Several musical organizations, sponsored by the University and directed by the Department of Music, provide excellent training in group music. See section on musical groups in the student handbook, Tiger Cub. These activities, which are open to students of the university, may be taken with or without credit.

Supplementary Requirements for Bachelor of Music and Bachelor of Arts Degree Candidates

1. All Music Majors and Music Education Majors taking MU 100 are to attend 80 percent (or nine, whichever is less) of the concerts and Wednesday afternoon convocations on the approved list compiled by the departmental office. This is on a pass/fail basis. The list of approved concert offerings is to be prepared by the departmental office each quarter and distributed to all students at the first convocation. A signed program is to be collected by a person designated by the departmental office. These are to be recorded by office personnel along with convocation attendance. Students must complete the appropriate number of quarters of convocation to clear graduation. Absences may be excused only by the Head of the Music Department.
2. At the end of the Sophomore year a comprehensive examination will be given which must be passed before the student is admitted to the upper division music courses. Transfer students must complete this examination to receive junior standing.
3.
 - a. Students electing the performance track will present a junior recital during the third year of study and a senior recital during the fourth year of study.
 - b. Students electing the Composition track will present an original composition in small form during the third year of study and an original composition in large form during the fourth year of study.
 - c. Students electing the Liberal Arts Music Major (MULA) will present a written thesis during the fourth year of study.
 - d. Students electing the Piano Pedagogy track will present a senior recital during the fourth year of study.
4. Credit in private instruction is based on the amount of practice, each credit hour requiring a minimum of five hours practice per week.
5. Students whose major performing medium is not piano or organ will elect piano as the minor instrument.
6. Participation in an approved music performing group is required each quarter, with or without credit. Participation in opera workshop is required of junior and senior voice majors.
7. All students taking private instruction will meet public performance requirements as designated by the faculty. (See Music Department special regulations regarding requirements for jury examinations and convocation performances.)

Basic Bachelor of Music Curriculum

FRESHMAN YEAR					
MU 100 Perform. Attendance	0	MU 100 Perform. Attendance	0	MU 100 Perform. Attendance	0
MU 131 Mat. & Org.	5	MU 132 Mat. & Org.	5	MU 133 Mat. & Org.	5
EH 110 Eng. Comp.	5	Core Philosophy (p. 16)	3	Core History (p. 16)	3
Core History (p. 16)	3	Core History (p. 16)	3	MU 253 Music Literature	1
MU 251 Music Literature	1	MU 252 Music Literature	1	Core Fine Arts (AT or TH, p. 16)	5
SOPHOMORE YEAR					
MU 100 Perform. Attendance	0	MU 100 Perform. Attendance	0	MU 100 Perform. Attendance	0
MU 231 Mat. & Org.	5	MU 232 Mat. & Org.	5	MU 233 Mat. & Org.	5
EH 220 Great Books I	5	EH 221 Great Books II	5	Core Mathematics (p. 16)	5
U 101 Soc., Cult. & Env.	3	U 102 Political Economy	3	U 103 Indiv. & Soc.	3
				MU 020 Soph. Comp. Exam.	0
JUNIOR YEAR					
MU 100 Perform. Attendance	0	MU 100 Perform. Attendance	0	MU 100 Perform. Attendance	0
MU 351 Music History	3	MU 352 Music History	3	MU 353 Music History	3
Core Science (p. 16)	5	Core Science (p. 16)	5	EH Adv. Comp. (p. 16)	5
SENIOR YEAR					
MU 100 Perform. Attendance	0	MU 100 Perform. Attendance	0	MU 100 Perform. Attendance	0
FL Foreign Language	5	FL Foreign Language	5	FL Foreign Language	5
				MU 040 Senior Project	0

Music Performance Track

Required in Addition to Basic Bachelor of Music Curriculum

FRESHMAN YEAR					
MUA 181 Performance (major)	3	MUA 181 Performance (major)	3	MUA 181 Performance (major)	3
MUA 187 Performance	1	MUA 187 Performance	1	MU 187 Performance	1
MU Perform. Group	1	MU Perform. Group	1	MU Perform. Group	1
SOPHOMORE YEAR					
MUA 181 Performance (major)	3	MUA 181 Performance (major)	3	MUA 181 Performance (major)	3
MUA 187 Performance	1	MUA 187 Performance	1	MU 187 Performance	1
MU Perform. Group	1	MU Perform. Group	1	MU Perform. Group	1
MU Ensemble *	1	MU Ensemble *	1	MU Ensemble *	1

College of Liberal Arts

JUNIOR YEAR

MUA 381 Performance (major)	3	MUA 381 Performance (major)	3	MUA 381 Performance (major)	3
MU 331 Mat. & Org.	3	MU 332 Mat. & Org.	3	MU 333 Mat. & Org.	3
MU 361 Conducting	2	MU 362 Conducting	2	MU 363 Conducting	2
MU Ensemble	1	MU Ensemble	1	MU Ensemble	1
Elective	3	Elective	3	Elective	3

SENIOR YEAR

MUA 381 Performance (major)	3	MUA 381 Performance (major)	3	MUA 381 Performance (major)	3
MU 452 or 454	3	MU Pedagogy	3	Elective	4
MU Ensemble	1	MU Ensemble	1		
Elective	3	Elective	3		

TOTAL - 211 QUARTER HOURS

* in lieu of three quarters of Ensemble, Vocal Performance Majors will take FL 391, Lyric Diction.

Music Composition Track

Required in Addition to Basic Bachelor of Music Curriculum

FRESHMAN YEAR

MUA 184 Performance	1	MUA 184 Performance	1	MUA 184 Performance	1
MU 154 Composition	1	MU 155 Composition	1	MU 156 Composition	1
MU Perform. Group	1	MU Perform. Group	1	MU Perform. Group	1

SOPHOMORE YEAR

MUA 184 Performance	1	MUA 184 Performance	1	MUA 184 Performance	1
MU 254 Composition	1	MU 255 Composition	1	MU 256 Composition	1
MU Perform. Group	1	MU Perform. Group	1	MU Perform. Group	1
MU Ensemble	1	MU Ensemble	1	MU Ensemble	1

JUNIOR YEAR

MUA 384 Performance	1	MUA 384 Performance	1	MUA 384 Performance	1
MU 331 Mat. & Org.	3	MU 332 Mat. & Org.	3	MU 333 Mat. & Org.	3
MU 361 Conducting	2	MU 362 Conducting	2	MU 363 Conducting	2
MU 334 Composition	1	MU 335 Composition	1	MU 336 Composition	1
MU 337 Modern Harmony	3	MU 338 Modern Harmony	3	MU 339 Modern Harmony	3
MU Perform. Group	1	MU Perform. Group	1	MU Perform. Group	1

SENIOR YEAR

MU 384 Performance	1	MU 384 Performance	1	MU 384 Performance	1
MU 435 Composition	3	MU 436 Composition	3	MU 437 Composition	3
MU 537 Orchestration	3	MU 300 Electronic Music	3	MU Perform. Group	1
MU Perform. Group	1	MU Perform. Group	1	Elective	4
Elective	6	Elective	6		

TOTAL - 209 QUARTER HOURS

Piano Pedagogy Track

Required in Addition to Basic Bachelor of Music Curriculum

FRESHMAN YEAR

MUA 184 Performance (piano)	1	MUA 184 Performance (piano)	1	MUA 184 Performance (piano)	1
MUA 187 Performance	1	MUA 187 Performance	1	MUA 187 Performance	1
MU 327 Piano Ensemble	1	MU 327 Piano Ensemble	1	MU 327 Piano Ensemble	1

SOPHOMORE YEAR

MUA 184 Performance (piano)	1	MUA 184 Performance (piano)	1	MUA 184 Performance (piano)	1
MUA 187 Performance	1	MUA 187 Performance	1	MUA 187 Performance	1
MU 327 Piano Ensemble	1	MU 327 Piano Ensemble	1	MU 327 Piano Ensemble	1
Elective	1	Elective	1	Elective	1

JUNIOR YEAR

MUA 381 Performance (piano)	3	MUA 381 Performance (piano)	3	MUA 381 Performance (piano)	3
CIM 304 Music & Rel. Arts	5	CIM 596 Curr. Trends	4	FED 300 Educ. Psych.	5
MU 457 Keyboard Lit.	1	MU 458 Keyboard Lit.	1	MU 459 Keyboard Lit.	1
MU 324 Accompanying	1	MU 325 Accompanying	1	MU 326 Accompanying	1

SENIOR YEAR

MUA 381 Performance (piano)	3	MUA 381 Performance (piano)	3	MUA 381 Performance (piano)	3
MU 300 Electronic Studio	3	MU 361 Conducting	2	MU 362 Conducting	2
MU 424 Accompanying	1	MU 425 Accompanying	1	MU 426 Accompanying	1
MU 447 Piano Pedagogy	3	MU 448 Piano Pedagogy	3	MU 449 Piano Pedagogy	3
MU 471 Piano Sk. & TT	2	MU 472 Piano Sk. & TT	2	MU 473 Piano Sk. & TT	2
Elective	1	Elective	1	Elective	2

TOTAL - 206 QUARTER HOURS

Jazz Studies Track

(when available)

Required in Addition to Basic Bachelor of Music Curriculum

FRESHMAN YEAR

MUA 184 Performance	1	MUA 184 Performance	1	MUA 184 Performance	1
MU 134 Lab Band	1	MU 134 Lab Band	1	MU 134 Lab Band	1
.....		.....		Elective	3

SOPHOMORE YEAR

MUA 184 Performance	1	MUA 184 Performance	1	MUA 184 Performance	1
MU 200 Jazz Piano	1	MU 201 Jazz Piano	1	MU 202 Jazz Piano	1
MU 134 Lab Band	1	MU 134 Lab Band	1	MU 134 Lab Band	1
Elective	3	Elective	3	Elective	3

JUNIOR YEAR

MUA 384 Performance	1	MUA 384 Performance	1	MUA 384 Performance	1
MU 331 Mat. & Org.	3	MU 332 Mat. & Org.	3	MU 300 Electronic Studio	3
MU 341 Jazz Theory	3	MU 342 Jazz Theory	3	MU 343 Jazz Theory	3
MU 344 Jazz Repertoire	3	MU 345 Jazz Repertoire	3	MU 346 Jazz Repertoire	3
MU 134 Lab Band	1	MU 134 Lab Band	1	MU 134 Lab Band	1

SENIOR YEAR

MUA 384 Performance	1	MUA 384 Performance	1	MUA 384 Performance	1
MU 361 Conducting	2	MU 362 Conducting	2	MU 439 Jazz Improvisation	3
MU 437 Jazz Improvisation	3	MU 438 Jazz Improvisation	3	MU 463 Jazz Comp. & Arr.	3
MU 461 Jazz Masterworks	3	MU 462 Jazz Comp. & Arr.	3	MU 134 Lab Band	1
MU 134 Lab Band	1	MU 134 Lab Band	1	.....
Elective	2	Elective	2	.....

TOTAL - 210 QUARTER HOURS**Department of Theatre**

The Department of Theatre provides instruction and production experience to students interested in developing their talents in the theatre arts, whether as majors or non-majors. Consequently, a broad range of classroom, laboratory, and performance experiences is provided in acting, directing, scenic and lighting design, costume design, theatre technology, construction and crafts, theatre history, dramatic literature, theatre criticism, theatre administration and management.

The Bachelor of Arts degree is designed for students seeking to study theatre within the liberal arts curriculum. The B.A. (THLA) is for students who choose to study theatre as a humanistic discipline or who wish to concentrate in theatre history/criticism, dramatic literature, performance or production.

The Bachelor of Fine Arts degree is for students who have specific professional goals in mind. The B.F.A. (TH) is for students seeking professional training and/or desiring an intensive program in a specific area of theatre. Admission to the program, generally at the end of six quarters of study at Auburn University or the end of the sophomore year, is by audition or presentation of portfolio for the Theatre faculty. Students are expected to maintain a 2.7 GPA in their area of emphasis, subject to continued quarterly review by the faculty. Final recommendation for graduation is made after the successful presentation of a recital or a major role or the successful execution of a design or major project during the student's final year.

Theatre B.F.A. - Performance Major**FRESHMAN YEAR**

TH 300 Theatre Lab	1	TH 300 Theatre Lab	1	TH 300 Theatre Lab	1
EH 110 English Comp.	5	TH 271 Play Analysis	3	TH 261 Costume Construction	3
TH 231 Theatre Tech. I	3	TH 265 Stage Makeup	3	TH 284 Dance Techniques	2
Core History (p. 16)	3	Core History (p. 16)	3	Core History (p. 16)	3
TH 200 Intro. to Acting	3	Electives	8	Core Philosophy (p. 16)	5

SOPHOMORE YEAR

TH 300 Theatre Lab	1	TH 300 Theatre Lab	1	TH 300 Theatre Lab	1
TH 211 Beg. Voice for the Actor	2	TH 214 Beg. Acting	3	TH 212 Intermed. Voice	2
TH 240 Theat. Design	3	TH 272 Dramatic Literature	3	TH 314 Intermed. Acting	3
Core Mathematics (p. 16)	5	EH 220 Great Books I	5	EH 221 Great Books II	5
U 101 Soc., Cult. & Env.	3	U 102 Political Economy	3	U 103 Indiv. & Soc.	3
.....		.....		Core Fine Arts (MU or AT) (p. 16)	3

College of Liberal Arts

JUNIOR YEAR

TH 300 Theatre Lab	1	TH 300 Theatre Lab	1	TH 300 Theatre Lab	1
TH 311 Studio: Voice I	2	TH 312 Studio: Voice II	2	TH 313 Studio: Voice III	2
TH 315 Studio: Acting I	3	TH 316 Studio: Acting II	3	TH 317 Studio: Acting III	3
TH 371 Hist. of the Theatre I	3	TH 372 Hist. of the Theatre II	3	TH 373 Hist. of the Theatre III	3
TH 489 or 218	2	TH 489 or 218	2	TH 489 or 218	2
Core Science (p. 16)	5	Core Science (p. 16)	5	EH 400 Adv. Comp. (p. 16)	5

SENIOR YEAR

TH 300 Theatre Lab	1	TH 300 Theatre Lab	1	TH 300 Theatre Lab	1
TH 321 Dir. Fundamentals	3	TH 412 Studio: Voice V	2	TH 413 Studio: Voice VI	2
TH 411 Studio: Voice IV	2	TH 416 Studio: Acting V	3	TH 417 Studio: Acting VI	3
TH 415 Studio: Acting IV	3	TH 489 or 318	2	TH 489 or 318	2
TH 489 or 318	2	Electives	10	Electives	9
Electives	5				

TOTAL - 192 QUARTER HOURS

Theatre B.F.A. – Design/Technology Major

FRESHMAN YEAR

TH 300 Theatre Lab	1	TH 300 Theatre Lab	1	TH 300 Theatre Lab	1
TH 200 Intro. to Acting	3	TH 232 Theatre Tech. II	4	TH 261 Costume Const.	3
TH 231 Theatre Tech. I	3	TH 271 Play Analysis	3	TH 284 Dance Tech.	2
EH 110 English Comp.	5	Elective	4	Core Philosophy (p. 16)	5
Core History (p. 16)	3	Core History (p. 16)	3	Core History (p. 16)	3
				CSE 100 Comp. App.	3

SOPHOMORE YEAR

TH 300 Theatre Lab	1	TH 300 Theatre Lab	1	TH 300 Theatre Lab	1
TH 240 Theat. Design	3	TH 345 Draft. for Theatre	4	U 103 Indiv. & Society	3
TH 340 Rand. for Theatre	4	TH 363 Costume Const. II	4	EH 220 Great Books I	5
Core Mathematics (p. 16)	5	TH Elective	4	Core Science (p. 16)	5
U 101 Soc., Cult. & Env.	3	U 102 Political Economy	3	Elective	3

JUNIOR YEAR

TH 300 Theatre Lab	1	TH 300 Theatre Lab	1	TH 300 Theatre Lab	1
TH 371 Hist. of Theatre I	3	TH 265 Stage Makeup	3	TH 321 Directing Fund.	3
TH Electives	3	TH 272 Dramatic Literature	3	TH 373 Hist. of Theatre III	3
Core Science (p. 16)	5	TH 372 Hist. of Theatre II	3	EH 400 Adv. Comp. (p. 16)	5
Core Fine Arts (AT or MU) (p. 16)	3	EH 221 Great Books II	5	Tech. & Design Electives	4

SENIOR YEAR

TH 300 Theatre Lab	1	TH 300 Theatre Lab	1	TH 300 Theatre Lab	1
Tech. & Design Elect.	9	TH 376 Prod. Mgmt. & TD	3	TH 499 Senior Project	4
Gen. Education Elect.	6	Tech. & Design Elect.	13	TH 400 Preprof. Practice	12

TOTAL - 192 QUARTER HOURS

Theatre B.F.A. – Production/Management Major

FRESHMAN YEAR

TH 300 Theatre Lab	1	TH 300 Theatre Lab	1	TH 300 Theatre Lab	1
TH 200 Intro. to Acting	3	TH 271 Play Analysis	3	TH 261 Costume Const.	3
TH 231 Theatre Tech. I	3	CSE 100 Comp. Appl.	3	TH 284 Dance Tech.	2
HY 101 World History	3	HY 102 World History	3	HY 103 World History	3
EH 110 English Comp.	5	Elective	5	Core Philosophy (p. 16)	5
				Elective	3

SOPHOMORE YEAR

TH 300 Theatre Lab	1	TH 300 Theatre Lab	1	TH 300 Theatre Lab	1
TH 240 Theatrical Design	3	TH 272 Dramatic Literature	3	EH 220 Great Books I	5
Core Mathematics (p. 16)	5	TH 345 Drafting for Theatre	4	U 103 Indiv. & Soc.	3
U 101 Soc., Cult. & Env.	3	Core Science (p. 16)	5	Core Science (p. 16)	5
MN 310 Prin. Mgt.	4	U 102 Political Economy	3	Fine Arts (AT or MU) (p. 16)	3

JUNIOR YEAR

TH 300 Theatre Lab	1	TH 300 Theatre Lab	1	TH 300 Theatre Lab	1
TH 320 Stage Mgt.	3	TH 265 Stage Makeup	3	TH 376 Prod Mgt./Tech. Dir.	3
TH 371 Hist. Theatre I	3	TH 372 Hist. Theatre II	3	TH 373 Hist. Theatre III	3
EH 221 Great Books II	5	Perf. & Tech. Elect.	9	EH 400 Adv. Comp. (p. 16)	5
Electives	4			Elective	5

SENIOR YEAR

TH 300 Theatre Lab	1	TH 300 Theatre Lab	1	TH 300 Theatre Lab	1
TH 321 Directing Fund.	3	Perf. & Tech. Elect.	15	TH 499 Sr. Project	4
TH 375 Th. Op. & Mgt.	4			TH 400 Prof. Internship	12
Elective	6				

TOTAL - 192 QUARTER HOURS

School of Nursing

CHARLOTTE PITTS, *Interim Dean*

THE SCHOOL OF NURSING, established in 1979, offers a program of study leading to the degree of Bachelor of Science in Nursing.

The nursing curriculum is designed to prepare beginning professional nurse generalists who are capable of functioning as members of the health-care team in providing care for individuals and groups in diverse settings. The program also provides an educational base for advancement in formal study, research and practice. The facilities and resources of the University are used to provide a broad academic background in the humanities and sciences. Graduates are eligible to take the NCLEX-RN examination to become registered nurses.

A pre-professional program in Nursing Science is required of students seeking admission to the professional curriculum. The first two years of course work are designated as Pre-Nursing (NS). The Professional Program (NUR) requires seven quarters of study, including classroom, laboratory and clinical experiences.

Curriculum in Pre-Nursing Science (NS)

LEVEL I														
First Quarter					Second Quarter					Third Quarter				
EH	110	English Composition	5	U	102	Political Econ.	3	U	103	Indiv. in Society	3			
U	101	Society & Culture	3	HY	101	World History (p. 16)	3	HY	102	World History (p. 16)	3			
MH	160	Pre-Calc. & Trig.	5	BI	101	Prin. of Biology	5	CH	102	Intro. Chem.	2			
NUR	101	Orient. to Nursing	2	CH	101	Intro. Chem.	2	CH	103L	Gen. Chem. Lab	1			
					Core Fine Arts (p. 16)			3	PG	212	Lifespan Hum. Dev.	5		
									Elective			3		
LEVEL II														
EH	220	Great Books I	5	EH	221	Great Books II	5	NUR	201	Statistics	5			
HY	103	World History (p. 16)	3	ZY	250	Hum. Anat.	5	ZY	251	Physiology	5			
NFS	200	Nutr. & Health	3	MB	300	Gen. Microbiol.	5	PA	218	Ethics	5			
									Elective			3		

TOTAL — 97 QUARTER HOURS

Curriculum in Professional Nursing (NUR)

LEVEL III				
NUR	302 Dim. of Prof. Nsg.	2	NUR 313 Psy./Men. Hlth. Nsg.	7
NUR	303 Health Assessment	4	NUR 435 Info. Mgt. in Nsg.	3
NUR	310 Nsg. Concepts I	8	NUR Elective	3
ZY	440 Clin. Physiology	3	or	
			NUR 312 Nsg. Concepts III	12
			NUR Elective	3
SUMMER				
NUR	312 Nsg. Concepts III	12		
NUR	495 Mgt. in Nursing	3		
	or			
NUR	313 Psy./Mental Hlth. Nsg.	7		
NUR	435 Info. Mgt. in Nsg.	3		
NUR	495 Mgt. in Nsg.	3		
LEVEL IV				
NUR	422 or 460	12	NUR 499 Senior Practicum	15
NUR	432 Nsg. Research	3	NUR 450 Senior Seminar	3
NUR	Elective	3		

TOTAL — 212 QUARTER HOURS

* Students should take CH 101 unless they have had high school chemistry and scored at least 25 on the ACT or 1130 on the SAT. See advisor for study plan taking CH 103.

Curriculum — Educational Advancement For Registered Nurses (EARN)

Summer Quarter		Fall Quarter		Winter Quarter	
ZY 441 Clinical Physiology II	3	ZY 440 Clinical Physiology I	3	NUR 423 Prev. in Comm. Sys.	3
NUR 303 Health Assessment	4	NUR 421 Prim. Prev. Client/Fam.	3	NUR 423L Comm. Sys. Lab	3
NUR 401 Trans. to Prof. Nursing	4	NUR 421L Prim. Prev. Lab	3	NUR 427 Rehab./Home Health	4
NUR 401L Prof. Nursing Lab	2	NUR 425 Prim. Prev./Acute Care ...	4	NUR 427L Rehab./Home Hlth. Lab .	5
		NUR 425L Acute Care Lab	5	NUR 435 Nur. Res. & Data Mgt.	3
Spring Quarter					
NUR 429 EARN Practicum	9				
NUR 497 Senior Seminar	3				
NUR 475 Ldsp./Mgt. & Info. Sys.	3				
NUR 475L Info. Systems Lab	1				

Curriculum – Accelerated Nursing Degree (AND)

Summer Quarter		Fall Quarter		Winter Quarter	
NUR 302 Dim. in Prof. Nursing	2	NUR 411 Prev. in Client Sys. I	6	NUR 436 Nur. Res. & Data Mgt.	3
NUR 303 Health Assessment	4	NUR 411L Prof. Practice II	8	NUR 412 Prev. in Client Sys. II	6
NUR 410 Prim., Sec. & Ter. Prev.	4	ZY 441 Clinical Physiology II	3	NUR 412L Prof. Practice III	8
NUR 410L Prof. Practice I	4				
ZY 440 Clinical Physiology I	3				
Spring Quarter		Summer Quarter			
NUR 420 Adv. Con. of Prevention	6	NUR 498 AND Practicum	14		
NUR 420L Prof. Practice IV	8	NUR 497 Prof. Nursing Seminar	4		
NUR 475 Ldsp./Mgt. & Info. Sys.	3				
NUR 475L Info. Systems Lab	1				

Admission

Freshman eligibility is determined by the University Admissions Office. Admission requirements are stated elsewhere in this *Bulletin*. High school mathematics, chemistry and biology courses are strongly recommended, along with other college preparatory courses in social science, history, literature and English composition. Due to changes in the Pre-Nursing curriculum, students should see the advisor for the School of Nursing.

Transfers from other institutions must apply through the University Admissions Office. Review of transcripts by the School of Nursing will determine the amount of credit allowed for the pre-nursing requirements. Students planning to transfer are encouraged to contact the School of Nursing as soon as possible for advisement on transfer of credits. An overall GPA of at least 2.5 is required of students desiring to transfer into the School of Nursing from another curriculum on campus.

Registered nurses: The School of Nursing offers an Educational Advancement for Registered Nurses (EARN) Program in which RN students may complete the requirements for the B.S.N. degree in one calendar year (four quarters) of full-time study beginning with summer quarter. A flexible format with full-time and part-time options allows RN students to continue employment. Registered nurse students must complete the pre-nursing curriculum required of all nursing majors. The School of Nursing should be contacted for further advisement.

Professional Program: Admission to the professional program is open annually in fall quarter. Pre-nursing students must formally apply in February to the School of Nursing. Applicants are notified by June 1 of acceptance or non-acceptance. Due to limited enrollment, all students who meet minimum criteria may not be admitted.

Criteria for consideration for admission include a minimum GPA of 2.5, completion of the pre-nursing requirements, references and a completed application.

Accelerated Nursing Degree Program: The School of Nursing offers an Accelerated Nursing Degree (AND) Program which enables students who hold a bachelor's or higher degree in another field to progress through the professional nursing curriculum in five quarters of full-time study beginning with the summer quarter. Students interested in the AND Program must complete specified pre-nursing courses prior to being considered for admission to the Professional curriculum. An undergraduate GPA of 2.5, a personal interview and satisfactory scores on pre-admission examinations are required for admission to the AND Program. The School of Nursing should be contacted for further advisement.

Academic Regulations

An advisor from the faculty or staff is assigned to each student majoring in nursing. Academic program planning is done with the advisors. Students should consult with their advisors each quarter.

Advanced placement or CLEP credit in pre-nursing courses is granted according to university policies stated elsewhere in the *Bulletin*. No advanced standing is allowed in the natural sciences by the School of Nursing. Proficiency examinations or Advanced Placement (CEEB), with accepted score, may be used for advanced placement.

An overall GPA of 2.0 must be maintained for progression through the professional program. Pre-nursing students who do not attain an overall GPA of at least 2.5 at the beginning of the second year should consider alternative fields of study.

A minimum grade of **C** is required in pre-nursing courses. Transfer credit will not be granted for courses in which a grade less than **C** is earned.

In the professional program, a minimum grade of **C** must be achieved in all courses. Because the professional nursing curriculum is designed for progressive development of nursing knowledge and skills, students who earn a grade less than **C** in a professional program

course are not allowed to progress to the next course. The course in which the student earns a grade less than **C** may be repeated one time only. Students who earn a grade less than **C** in two or more NUR courses or whose GPA falls below a 2.0 will be dropped from the professional program and must reapply. Transfer credit is not generally allowed for courses in the professional program.

The Professional Program

Facilities: The School of Nursing is housed in Miller Hall, where classrooms, an auditorium, a skills laboratory and faculty offices are located. A learning resource and computer center is jointly operated with the School of Pharmacy. Facilities for clinical nursing experiences include East Alabama Medical Center and other hospitals in the area, Lee County Mental Health Center, clinics, nursing homes, physicians' offices, Lee County Public Health Department, public schools and industrial sites. Students are responsible for complying with policies and procedures required by agencies in which clinical work is done.

Expenses: Students accepted into the professional program should expect to incur additional expenses. Uniforms, equipment, transportation to clinical sites, a health examination and liability and health insurance coverage are among the requirements. Detailed information is furnished by the dean's office at the time of admission.

Accreditation: The School of Nursing operates with full approval of the Alabama Board of Nursing and is accredited by the National League for Nursing.

School of Pharmacy

R. LEE EVANS, *Dean*
DIANE E. BECK, *Associate Dean*

THE SCHOOL OF PHARMACY offers the Doctor of Pharmacy (Pharm.D.) and two graduate degrees. Each is accredited by the appropriate organization. The two graduate degrees, a Master of Science (M.S.) and a Doctor of Philosophy (Ph.D.), are described in the Graduate School section of this *Bulletin*.

Pharm.D. program graduates are prepared to enter the pharmacy profession and provide pharmaceutical care. Pharmacists are responsible for preventing, identifying and solving problems that are medication-related and for assuring that a patient's drug therapy will improve the patient's quality of life by curing illness or disease.

Opportunities for graduates vary from the traditional community and institutional pharmacy settings to community-based healthcare or managed care environments. In these settings, pharmacists have direct patient care responsibilities. Pharmacists also have the opportunity to position themselves as primary care providers. In some areas of the country, pharmacists directly prescribe medications in collaboration with other prescribers. Opportunities in industrial pharmacy include research, product development, analytical control, product manufacturing, government and sales. There are also opportunities in research and teaching in an academic environment. Information about the educational and career achievements of School of Pharmacy graduates may be obtained from the Office of Academic and Student Affairs.

The Auburn Pharm.D. degree program is a four-year course of study which requires completion of the pre-pharmacy curriculum prior to admission. Consistent with accreditation standards and guidelines, the curriculum provides an appropriate balance of course work in the five following areas: (1) biomedical sciences, (2) pharmaceutical sciences, (3) behavioral, social and administrative pharmacy sciences, (4) pharmacy practice and (5) pharmacy practice experiences. The goal of this curriculum is to prepare graduates who can provide pharmaceutical care and are lifelong learners. To accomplish this, the curriculum involves students in continuous patient care responsibilities early in the curriculum. Students also participate as active learners in interdisciplinary teaching models. The experiential component of this curriculum is taught at various affiliated clinical sites throughout Alabama and in Georgia and Florida.

Pharm.D. students are required to participate in activities beyond course requirements. These activities provide an environment in which students can develop the knowledge, attitudes and values that characterize the professional practitioner and include self-tutorial reviews, obtaining cardiopulmonary resuscitation certification and participation in the orientation to pharmacy school and the professional seminar series.

Admission

Course requirements for admission to the School of Pharmacy may be satisfied by completion of the Pre-Professional Curricula in the College of Sciences and Mathematics. Any or all of these requirements may be met by transfer of credit from other institutions. Transfer students from junior colleges may receive no more than 102 quarter hours credit for the pre-pharmacy curriculum.

Admission is limited and is contingent upon available facilities and faculty. To be considered for admission the applicant must have a satisfactory GPA based on all courses attempted, as well as a satisfactory science index (GPA on all mathematics and science courses). A grade of D in any required course will not be accepted.

Students are accepted into the School of Pharmacy only during fall quarter. Applications should be submitted not later than January 15. To be considered for admission to the School of Pharmacy, the applicant must forward to the Pharmacy Admissions Committee a completed application, three reference forms and complete transcripts of all work attempted. For an application packet, contact the Office of Academic and Student Affairs at 209 Pharmacy Building, Auburn University, AL 36849-5501.

Applicants must appear for a personal interview. Applicants are notified as to acceptance or denial no later than June 1. All pre-pharmacy course work must be completed by the end of the summer term before the professional program begins in the fall quarter.

Any student in the pharmacy curriculum who is subjected to academic suspension and desires to re-enter the School of Pharmacy must, in addition to complying with the pertinent university regulations, be approved by the Pharmacy Admissions Committee for readmission.

Guidelines to Academic Performance

1. The implementation of all guidelines will be in addition to those existing policies and standards of the University.
2. GPAs will be calculated only from professional course work. Professional course work is defined as core pharmacy courses, approved by the faculty and listed in the Doctor of Pharmacy curriculum.
3. The student must observe prerequisites and corequisites stated in the current *Auburn University Bulletin*.
4. A copy of the School of Pharmacy Academic Standards may be obtained from the Office of Academic and Student Affairs.
5. Appeals to these standards may be made to the Admissions and Academic Standards Committee through its chairperson.

Licensure Requirements

The Alabama State Board of Pharmacy (BOARD) regulates the practice of pharmacy in the state. In brief, the requirements for licensure are:

1. B.S. in Pharmacy or Pharm.D. degree from an accredited School of Pharmacy.
2. A total of 1,500 hours of practical experience under the supervision of a registered preceptor, 400 hours of which must be completed after graduation.
3. Students are eligible to and should file an application with the BOARD for registration as an extern/intern at the time they enroll in the School of Pharmacy. Periods of any work experience must be reported to the Secretary of the Board within 10 days of beginning and within 10 days after ending the experience or at intervals of 16 weeks, whichever first occurs.
4. Graduates of accredited schools of pharmacy are eligible to take the BOARD examination. Applications for taking the BOARD examination may be obtained from the Office of Academic and Student Affairs.
5. The Office of the Dean of the School of Pharmacy will be glad to respond to questions on licensure. Requests for information can also be referred directly to: Mr. Jerry Moore, Secretary, Alabama State Board of Pharmacy, One Perimeter Park South, Suite 425 So., Birmingham, Ala. 35243.

Continuing Education and Extension Services

Continuing education and extension service programs are available to pharmacists throughout the year. Faculty members of the School of Pharmacy as well as practicing pharmacists and industry leaders and consultants in state and federal governmental agencies serve as instructors.

The Alabama Board of Pharmacy requires 15 clock hours of approved continuing education for renewal of each pharmacist's controlled substances permit.

Doctor of Pharmacy Curriculum

FIRST PROFESSIONAL YEAR

First Quarter			Second Quarter			Third Quarter		
ZY	560 Mamm. Physiology I	5	ZY	561 Mamm. Physiology II	5	PC	347 Human Pathology	5
CH	518 Biochemistry	4	CH	519 Biochemistry	4	PCS	465 Pharmacy Oper. Syst.	3
PCS	351 Pharmaceutical Care	3	PCS	361 Pharmacoeconomics	2	PCS	464 Jurisprudence	3
PC	350 Patient/Phys. Assess.	1	PCS	471 Prof. Communication I	3	PYD	402 Drug Literature I	3
PY	301 Pharmaceutics I	3	PY	302 Pharmaceutics II	3	PY	450 Prin. of Drug Action I	4
PY	301 L Pharmaceutics Lab	1	PY	302L Pharmaceutics Lab	1	PYD	342 Pharmacy Prac. Exp. II	1
PYD	340 Pharmacy Prac. Exp. I	1						

SECOND PROFESSIONAL YEAR

PYD	401 Antimicrob. Imm. Ther.	4	PY	402 Pharm. Biotechnology	3	PC	452 Disease/Drug Interact.	4
PY	451 Prin. of Drug Action II	4	PY	452 Prin. of Drug Action III	4	PYD	411 Pharmacotherapy I	3
PY	401 Pharmaceutics III	3	PYD	403 Drug Literature II	3	PYD	412 Pharmacotherapy II	3
EH	400 Adv. Comp.	5	PC	451 Pat/Phys. Assess. II	3	PYD	413 Pharmacotherapy III	3
PYD	441 Pharm. Prac. Exp. III	1	PY	502 Pharmacokinetics	1	PYD	443 Pharm. Prac. Exp. V	1
			PYD	442 Pharm. Prac. Exp. IV	1		Professional Elective	3

THIRD PROFESSIONAL YEAR

PYD	414 Pharmacotherapy IV	3	PYD	418 Pharmacotherapy VIII	3	PYD	422 Pharmacotherapy XII	3
PYD	415 Pharmacotherapy V	3	PYD	419 Pharmacotherapy IX	3	PYD	423 Pharmacotherapy XIII	3
PYD	416 Pharmacotherapy VI	3	PYD	420 Pharmacotherapy X	3	PYD	424 Pharmacotherapy XIV	3
PYD	417 Pharmacotherapy VII	3	PYD	421 Pharmacotherapy XI	3	PYD	425 Pharmacotherapy XV	3
PYD	444 Pharm. Prac. Exp. VI	1	PYD	445 Pharm. Prac. Exp. VII	1	PYD	446 Pharm. Prac. Exp. VIII	1
	Professional Elective	3		Professional Elective	3		Professional Elective	3

FOURTH PROFESSIONAL YEAR

PC	465 APE: Gen. Medicine	8
PC	466 APE: Ambulatory Care	8
PC	467 APE: Adv. Pharm. Care	8
PC	468 APE: Electives	8
PC	542 Clinical Seminar	2

NOTES:

1. Beginning Fall 1997, the School of Pharmacy will change to the Doctor of Pharmacy degree as the sole entry-level degree. During this transition period, the sequencing and content of courses may change slightly each year. Students should contact the Office of Academic and Student Affairs for a summary of such changes. These changes will not prolong the student's course of study. B.S. program students who entered the School of Pharmacy prior to Fall 1997 should contact the Office of Academic and Student Affairs to determine which of the above courses may be taken in lieu of those in their B.S. Pharmacy degree curriculum or to track into the Pharm.D. program.
2. Students must complete CPR and First Aid certification prior to beginning pharmacy school.
3. Computer literacy must be demonstrated prior to beginning pharmacy school. All students are strongly encouraged to purchase a personal computer.
4. During the academic year, students are required to attend the Professional Seminar Series.
5. A set of Class C, metric and apothecaries' weights and a lab coat, which may be purchased from ASP (Academy of Students of Pharmacy), are required for pharmacy laboratories.
6. All School of Pharmacy elective courses are acceptable for the professional restrictive electives. The Office of Academic and Student Affairs will provide information on any non-pharmacy elective courses which are acceptable. ROTC students should see their advisor concerning special accommodations.
7. A student who is qualified and has the prerequisites may take up to 10 hours of graduate course work in the fifth year; however, such work cannot be applied toward both the undergraduate and graduate degrees.
8. At the end of each Spring quarter, students will take an examination that will assess their ability to integrate the knowledge, attitudes and skills learned to date. Students may be assigned remedial course work should their performance be unsatisfactory.
9. Students are notified of their site assignments one year prior to scheduled completion of the Advanced Practice Experiences. Rotation sites are located throughout Alabama, western Georgia and the Florida panhandle. Although students may select their sites, each site has a limited enrollment. Students are responsible for identifying housing and assessing its safety and living conditions (e.g., privacy and single sex housing). Students are also responsible for incurring housing and other living expenses when assigned to clinical rotation sites away from the Auburn campus.
10. At the beginning of each academic year, students are required to furnish professional liability insurance, up-to-date CPR and First Aid certification, personal medical insurance and documentation that immunizations are up to date.
11. A prerequisite statement denoting "— year PYD standing" indicates the student has passed all courses in the prior year.
12. The numbers of some courses have recently been changed. Students will not be awarded credit for both the old and new course numbers. Students should contact the Office of Academic and Student Affairs for a list of applicable courses.

College of Sciences and Mathematics

STEWART W. SCHNELLER, *Dean*

LAWRENCE C. WIT, *Associate Dean for Academic Affairs*

JOHN D. WEETE, *Associate Dean for Research*

WILLIAM J. DORGAN, *Assistant Dean for Pre-Health Professions*

THE COLLEGE OF SCIENCES AND MATHEMATICS provides programs in the physical sciences, life sciences and mathematics at the undergraduate and graduate levels. The College also offers scientific and mathematical service courses for students enrolled in all of the other colleges and schools. The College includes the following departments: Botany and Microbiology; Chemistry, Discrete and Statistical Sciences; Geology, Mathematics, Physics, Zoology and Wildlife Science. The Arboretum, Leach Science Center, and Plant Molecular Genetics Laboratory are also included in the College of Sciences and Mathematics.

Undergraduate Degrees

1. Four-year bachelor's degree programs are offered in two areas:

a. Departmental curricula are available in botany, chemistry, biochemistry, geology, laboratory and medical technology, microbiology, molecular biology, marine biology, mathematics, applied mathematics, applied discrete mathematics, physics, wildlife science and zoology.

b. Pre-professional curricula are offered in pre-dentistry, pre-medicine, pre-optometry, pre-physical therapy, pre-pharmacy and pre-veterinary medicine.

Embodied in these curricula are the requirements of the University Core Curriculum.

2. Admission — The academic requirements and demands on majors in sciences and mathematics necessitate a high school preparation of high intellectual quality. The following is recommended as minimum preparation: English, four units; mathematics (including algebra, geometry, trigonometry and pre-calculus), four units; chemistry, one unit; biology, one unit; history, literature, social science, two or three units. Both physics and foreign language are highly recommended.

Transfers from other institutions must apply through the Admissions Office. The College of Sciences and Mathematics allows credit for courses completed with grades of **C** or better provided the courses contain equivalent content to Auburn courses or can be logically substituted for Auburn courses. Junior college credit is disallowed for courses taught at Auburn at the 300-level or higher.

Many COSAM curricula require students to begin with MH 161. Students not prepared for MH 161 must first take MH 160. See advisor for details.

Transfers from on-campus may declare a major in the College of Sciences and Mathematics if they: (1) have a cumulative Auburn GPA of at least 2.0 (on all work attempted) and (2) have completed at least 10 hours of Auburn University course work in the desired major with at least a 2.0 GPA in all such courses. Courses in the major are those carrying the appropriate prefix(es) of the intended curriculum. Students not meeting these standards may enroll in the General Sciences and Mathematics (GSM) curriculum if they have not reached senior standing (144 hours). Students in the GSM curriculum may declare a Sciences and Mathematics major after satisfying the above requirements. A student who enters the GSM curriculum because he or she is not qualified to declare a major can remain in GSM for a maximum of four quarters or until senior standing is reached. After this, if the student is still not qualified to declare a major, he or she will be disenrolled from the College of Sciences and Mathematics.

Graduate Degrees

Master of Science and Doctor of Philosophy degrees are offered in the College of Sciences and Mathematics. Degree programs are described in this *Bulletin*.

Dual Degree Program in Engineering

This program provides for enrollment in a curriculum of the College of Sciences and Mathematics for approximately three academic years and in the College of Engineering for approximately two academic years.

The student must complete the basic requirements of the University Core Curriculum and the requirements for a major within a department in the College of Sciences and Mathematics. The student is not required to take the usual number of hours of electives. Thus, he/she

may transfer to the College of Engineering after the end of the junior year. Following completion of the academic requirements for one of the 11 baccalaureate degrees in the College of Engineering, two degrees will be awarded: a Bachelor of Science degree in the Sciences and Mathematics major, and a bachelor's degree in the designated engineering field.

Curriculum in Materials Engineering

An interdisciplinary curriculum in materials engineering is administered by the Department of Mechanical Engineering in the College of Engineering. It is conducted cooperatively by academic departments of the College of Engineering and the College of Sciences and Mathematics through a faculty Materials Engineering Curriculum Committee.

Curriculum in Geological Engineering

An interdisciplinary curriculum in geological engineering is administered by the Department of Civil Engineering in the College of Engineering. It is conducted cooperatively by the Department of Civil Engineering and the Department of Geology in the College of Sciences and Mathematics.

Minor in Botany

A minor curriculum in botany will provide students in related course disciplines with an incentive to broaden their knowledge base in plant biology and enhance career opportunities in molecular biology or environmental studies. The minor will consist of a minimum of 25 credit hours from the following list (to include three hours of BY 460 as the terminal course: BY 306, 405, 460, 506, 513, 514, 515, 550).

Teacher Education

Students with majors in mathematics or the sciences who wish also to prepare for certification as teachers in secondary schools may pursue the dual objective of completing the requirements for the B.S. degree in their major and the requirements of the Teacher Education Program.

Students who choose the dual objective program should declare this intent to their departmental advisors by the end of their sophomore year. Students pursuing the dual objective plan will be assigned an advisor in the College of Education who will advise them on matters involving requirements for completing the Teacher Education Program. See detailed discussion of admission and retention procedures for teacher education elsewhere in this *Bulletin*.

Cooperative Education Programs

Cooperative Education Programs give students an opportunity to integrate their academic training with relevant work experience. Students alternate between school and a work assignment provided through the Director of the Cooperative Education Program.

Advisory Services for Students

Before a major is declared, the dean's office provides counseling services to the student. After a major is declared, the head of the department (or their designee) in which the student majors becomes the student's advisor and is charged with providing academic counsel for the student.

The University Honors Program

This program offers individual learning opportunities, the possibility of accelerated entry into a master's program, and participation in honors courses to entering freshmen with extraordinarily high academic aptitude.

Web Page

Further information about the College of Sciences and Mathematics can be found at:
<http://www.auburn.edu/academic/science-math/COSAM/docs/>

The General Sciences and Mathematics Curriculum (GSM)

This curriculum is primarily for freshmen who have not decided on a specific major field of study and for transfer students having deficiencies which preclude their acceptance in a degree program. Freshmen entering this curriculum must declare a major by the end of their fourth quarter. Transfer students must complete a specific approved program to clear their admission to a major field of study.

The General Curriculum (GSM)

FRESHMAN YEAR		
First Quarter	Second Quarter	Third Quarter
EH 110 Eng. Comp. 5	Foreign Language* 5	Foreign Language 5
Science Requisite** 4-5	Science Requisite** 4-5	Science Requisite** 4-5
MH 161 An. Geom. & Calc. 5	MH 162 An. Geom. & Calc. 5	MH 163 An. Geom. & Calc. 5
U 101 Soc. & Culture 3	U 102 Polit. Econ. 3	U 103 Indiv. in Soc. 3
ROTC or Elective 1	ROTC or Elective 1	ROTC or Elective 1

* Students with a strong background in foreign language are encouraged to complete a year of language in the freshman year.

** Science requirement must be satisfied by taking courses from the following sequences: BI 101-102-103; CH 103-104-105 or CH 111-112-113 and labs; GL 110-111 and 240; or PS 205-206-207 or PS 220-221-222 and labs.

Departmental Curricula

Departmental curricula leading to the Bachelor of Science degree include botany, chemistry, biochemistry, geology, earth science, microbiology, molecular biology, marine biology, laboratory and medical technology, mathematics, applied mathematics, applied discrete mathematics, physics, wildlife science and zoology.

Botany

The Botany major is for students interested in fundamental plant sciences. The required courses serve as a basis of knowledge of plants and future experimentation with plant systems. Proper elective selection prepares students for various careers in the plant sciences.

Curriculum in Botany (BY)

FRESHMAN YEAR		
First Quarter	Second Quarter	Third Quarter
BI 101 Prin. of Biology 5	BI 102 Plant Biology 5	BI 103 Animal Biology 5
MH 161 An. Geom. & Cal. 5	MH 162 An. Geom. & Cal. 5	CH 104 Fund. Chem. 4
EH 110 English Comp. 5	CH 103 Fund. Chem. 4	CH 104 Fund. Chem. Lab 1
U 101 Soc. & Cult. 3	CH 103 Fund. Chem. Lab 1	MH Elect. or DMS 215 5
	U 102 Polit. Econ. 3	U 103 Indiv. & Soc. 3
SOPHOMORE YEAR		
CH 207 Org. Chem. 4	CH 208 Org. Chem. 3	ZY 300 Genetics 5
CH 207 Org. Chem. Lab 1	CH 208 Org. Chem. Lab 2	Core Fine Arts (p. 16) 3
Core History (p. 16) 3	Core History (p. 16) 3	Core History (p. 16) 3
Foreign Language 5	Foreign Language 5	PA 102 Intro. to Ethics 5
EH 220 Great Books I 5	EH 221 Great Books II 5	
JUNIOR YEAR		
BY 306 Fund. Plant Phys. 5	BY 405 Intr. Mol. Gen. 4	BY 506 or 513 5
EH Adv. Comp. (p. 16) 5	PS 205 Intro. Physics 4	PS 206 Intro. Physics 4
Electives 6	PS 205 Phys. Lab 1	PS 206 Phys. Lab 1
	Electives 6	Electives 6
SENIOR YEAR		
BY Spec. Prob. * 3	BY Spec. Prob. * 3	Electives 15
BY Elective 5	BY Elective 5	
Electives 8	Electives 8	

TOTAL — 200 QUARTER HOURS

* Special Problems requirements are arranged in consultation with an advisor.

In consultation with an advisor, 10 hours of BY electives and 20 hours of additional electives will be scheduled. These electives preferably should be selected from one of the following two lists depending upon area of interest or concentration. Basic and advanced ROTC up to a total of 12 quarter hours may be scheduled from remaining free electives. **List A:** BY 460, 470, 505, 506, 507, 509, 510, 513, 514, 515, 517, 518; GL 205; PLP 309; ZY 241, 303, 306, 436, 516, 517. **List B:** BY 460, 470, 514, 515, 550; CH 518, 518L, 519, 519L, 521; MB 300, 522, 522L, 540, 542, 543, 543L, 545; ZY 310, 519.

Chemistry

This American Chemical Society accredited curriculum prepares students for careers in both pure and applied chemistry with a dual emphasis on classroom and laboratory experience. A flexible senior year allows students to tailor the program to their individual professional goals. Graduates will be prepared to enter the profession immediately or continue for advanced degree programs. The senior research program introduces students to modern advanced techniques and approaches to chemical research in an area of their interests by completing an individual research project in conjunction with a faculty advisor.

Curriculum in Chemistry (CH)

FRESHMAN YEAR

First Quarter

CH 111 General Chem.	4
CH 111L Gen. Chem. Lab.	1
MH 161 An. Geom. & Cal.	5
EH 110 Eng. Comp.	5
ROTC or Elective	1

Second Quarter

CH 112 General Chem.	4
CH 112L Gen. Chem. Lab.	1
MH 162 An. Geom. & Cal.	5
Core History (p. 16)	3
ROTC or Elective	1

Third Quarter

CH 113 General Chem.	4
CH 113L Gen. Chem. Lab.	1
MH 163 An. Geom. & Cal.	5
Core History (p. 16)	3
ROTC or Elective	1

SOPHOMORE YEAR

CH 207 Organic Chemistry	4
CH 207L Organic Chem. Lab.	1
MH 264 An. Geom. & Cal.	5
PS 220 Gen. Physics I	3
PS 220L Gen. Physics Lab.	1
Core History (p. 16)	3
ROTC or Elective	1

CH 208 Organic Chemistry	3
CH 208L Organic Chem. Lab.	2
MH 265 Lin. Diff. Equations	3
PS 221 Gen. Physics II	3
PS 221L Gen. Physics Lab.	1
EH 220 Great Books I	5
ROTC or Elective	1

CH 209 Org. Chemistry	4
CH 209L Org. Chem. Lab.	2
MH 266 Top. Lin. Algebra	5
PS 222 Gen. Physics III	3
PS 222L Gen. Physics Lab.	1
EH 221 Great Books II	5
ROTC or Elective	1

JUNIOR YEAR

CH 507 Physical Chemistry	4
CH 507L Physical Chem. Lab.	1
FL Foreign Language *	5
EH 400 or 404	5

CH 508 Physical Chemistry	4
CH 508L Physical Chem. Lab.	1
FL Foreign Language	5
CH 305 Anal. Chem.	3
CH 305L Anal. Chem. Lab.	2

CH 509 Physical Chemistry	4
CH 509L Phys. Chem. Lab.	1
FL Foreign Language	5
CH 513 Anal. Chemistry	5
PS 320 Modern Physics	4

SENIOR YEAR

CH 510 Int. Inorg. Chem.	5
CH 504 or 518+L	5
CH 490 Spec. Prob. Chem.	5
U 101 Soc. & Cult.	3

CH 511 Int. Inorg. Chem. II	5
CH 512 or 518+L or 519+L	5
U 102 Polit. Econ.	3
Core Fine Arts (p. 16)	3

U 103 Indiv. in Soc.	3
Elective	6
Core Philosophy (p. 16)	5

TOTAL — 198 QUARTER HOURS

* German, French, Japanese, or Russian through the first year sequence.

Curriculum in Biochemistry (BCH)

FRESHMAN YEAR

First Quarter

CH 111 General Chem.	4
CH 111L Gen. Chem. Lab.	1
MH 161 An. Geom. & Cal.	5
EH 110 Eng. Comp.	5
ROTC or Elective	1

Second Quarter

CH 112 General Chem.	4
CH 112L Gen. Chem. Lab.	1
MH 162 An. Geom. & Cal.	5
Core History (p. 16)	3
Core Fine Arts (p. 16)	3
ROTC or Elective	1

Third Quarter

CH 113 General Chem.	4
CH 113L Gen. Chem. Lab.	1
MH 163 An. Geom. & Cal.	5
BI 101 Prin. Biol.	5
ROTC or Elective	1

SOPHOMORE YEAR

CH 207 Organic Chemistry	4
CH 207L Organic Chem. Lab.	1
MH 264 An. Geom. & Cal.	5
PS 220 Gen. Physics I	3
PS 220L Gen. Physics Lab.	1
Core History (p. 16)	3
ROTC or Elective	1

CH 208 Organic Chemistry	3
CH 208L Organic Chem. Lab.	2
MH 265 Lin. Diff. Equations	3
PS 221 Gen. Physics II	3
PS 221L Gen. Physics Lab.	1
EH 220 Great Books I	5
ROTC or Elective	1

CH 209 Org. Chemistry	4
CH 209L Org. Chem. Lab.	2
Core History (p. 16)	3
PS 222 Gen. Physics III	3
PS 222L Gen. Physics Lab.	1
EH 221 Great Books II	5
ROTC or Elective	1

JUNIOR YEAR

CH 507 Physical Chemistry	4
CH 507L Physical Chem. Lab.	1
U 101 Soc. & Cult.	3
EH 400 or 404	5
Elective	3

CH 508 Physical Chemistry	4
CH 508L Physical Chem. Lab.	1
ZY 310 Cell Biology	4
CH 305 Anal. Chem.	3
CH 305L Anal. Chem. Lab.	2
U 102 Polit. Econ.	3

CH 509 Physical Chemistry	4
CH 509L Phys. Chem. Lab.	1
BY 300 Microbiology	5
ZY 524 An. Physiology	5
U 103 Indiv. in Soc.	3

SENIOR YEAR

CH 518 Biochemistry	4
CH 518L Biochemistry Lab.	1
CH 510 Int. Inorg. Chem.	5
CH 490 Spec. Prob. Chem.	5

CH 511 Int. Inorg. Chem. II	5
CH 519 Biochemistry	4
CH 519L Biochemistry Lab.	1
Core Philosophy (p. 16)	5

CH 521 Biochemistry	4
CH 513 An. Chemistry	5
Elective	6

TOTAL — 200 QUARTER HOURS

Geology

This curriculum gives the student a broad background in the geosciences, as well as an opportunity to specialize in an area of interest (i.e., environmental geology, paleontology) through elective major or related courses. The curriculum prepares the student for a broad range of employment possibilities with environmental or geological consulting companies, state or federal agencies, mining and oil companies, utilities, etc., and for further academic pursuits. The Geology option is recommended for those interested in preparation for graduate studies or employment in the field of geology. The Earth Science option provides the student an opportunity to tailor studies to include additional course work in related fields or to

combine majors (with business, civil engineering, education or law, for example) to broaden employment possibilities or to prepare for a more multi-disciplinary graduate program of study.

Curriculum in Geology (GL)

FRESHMAN YEAR								
First Quarter			Second Quarter			Third Quarter		
BI	101 Prin. of Biology	5	BI	102 Plant Biology	5	BI	103 Animal Biology	5
GL	110 Physical Geology	5	GL	111 Hist. Geology	5	MH	161 An. Geom. & Cal.	5
EH	110 English Comp.	5	PA	102 Intr. Ethics	5	HY	103 or 123 (p. 16)	3
HY	101 or 121 (p. 16)	3	HY	102 or 122 (p. 16)	3	Elective		3
SOPHOMORE YEAR								
EH	220 Great Books I	5	GL	206 Inv. Paleozoology	5	GL	240 Struct. Geology	5
MH	162 An. Geom. & Cal.	5	MH	163 An. Geom. & Cal.	5	EH	221 Great Books II	5
CH	103 Fund. Chem. *	4	CH	104 Fund. Chem.	4	CH	105 Fund. Chem.	4
CH	103LGen. Chem. Lab	1	CH	104LGen. Chem. Lab	1	CH	105LGen. Chem. Lab	1
			Elective		3	Elective		3

During the Summer Quarter following the sophomore year, the student should take GL 215 (6) and GL 231 (2).

JUNIOR YEAR									
Elective		3	GL	302 Optical Min.	5	GL	305 Ign. & Met. Pet.	5	
GL	301 Mineralogy	5	PS	206 Intr. Phys. II	4	EH	400 Adv. Comp. (p. 16)	5	
PS	205 Intr. Physics I	4	PS	206 Intr. Phys. Lab	1	PS	207 Intr. Phys. III	3	
PS	205 Intr. Phys. Lab	1	GL	Geology Elective	3	PS	207 Intr. Phys. Lab	1	
U	101 Soc. & Cult.	3	U	102 Polit Econ.	3	U	103 Indiv. in Soc.	3	
SENIOR YEAR									
GL	401 Sed. Pet.	5	GL	411 Stratigraphy	5	GL	Geology Elective	5	
GL	Geology Elective	5	GL	Geology Elective	5	Tech. Elective		5	
Elective		5	Tech. Elective		5	Core Fine Arts (p. 16)		3	

* Chemistry may be started with CH 101. See advisor for details.

GEOLOGY ELECTIVES AND TECHNICAL ELECTIVES: See advisor for details.

Curriculum in Geology/Earth Science Option (GES)

FRESHMAN YEAR								
First Quarter			Second Quarter			Third Quarter		
BI	101 Prin. of Biology	5	BI	102 Plant Biology	5	BI	103 Animal Biology	5
GL	110 Physical Geology	5	GL	111 Hist. Geology	5	MH	161 An. Geom. & Cal.	5
EH	110 English Comp.	5	PA	101 Logic	5	HY	103 or 123 (p. 16)	3
HY	101 or 121 (p. 16)	3	HY	102 or 122 (p. 16)	3	Elective		3
SOPHOMORE YEAR								
EH	220 Great Books I	5	EH	221 Great Books II	5	GL	240 Struct. Geology	5
DMS	215 Intr. Bio. Stat.	5	GL	Geology Elective	5	GY	240 Cartography	5
CH	103 Fund. Chem. *	4	CH	104 Fund. Chem.	4	CH	105 Fund. Chem.	4
CH	103L Gen. Chem. Lab	1	CH	104L Gen. Chem. Lab	1	CH	105L Gen. Chem. Lab	1
Elective		3	U	101 Soc. & Cult.	3	U	102 Polit Econ.	3

During the Summer Quarter following the sophomore year, the student should take GL 215 (6) and GL 231 (2).

JUNIOR YEAR										
FL	Foreign Lang.	5	FL	Foreign Lang.	5	EH	400 Adv. Comp. (p. 16)	5		
GL	301 Mineralogy	5	GL	Geology Elective	5	FL	Foreign Lang.	5		
U	103 Indiv. in Soc.	3	PS	205 Int. Phys. I	4	PS	206 Int. Phys. II	4		
Computer Science		3	PS	205 Physics Lab	1	PS	206 Physics Lab	1		
			Core Fine Arts (p. 16)							
SENIOR YEAR										
GL	Geol. Elective	5	Technical Elective (see advisor)			5	GL	Geol. Elective	5	
PS	207 Int. Phys. III	3	Technical Elective (see advisor)			5	Technical Elective (see advisor)			5
PS	207 Physics Lab	1	Elective			5	Elective			3
Elective		4								

GEOLOGY ELECTIVES (20 HOURS)

A minimum of one course from each group. GROUP 1: GL 205, 206. GROUP 2: GL 302, 305, 421. GROUP 3: GL 401, 411.

TOTAL — 204 QUARTER HOURS

* Chemistry may be started with CH 101. See advisor for details.

Geological Engineering

The curriculum in geological engineering is an interdisciplinary curriculum offered cooperatively by the departments of Civil Engineering (College of Engineering) and Geology (College of Sciences and Mathematics). The curriculum is administered by the College of Engineering and monitored by a faculty Geological Engineering Curriculum Committee.

The program consists of 203 quarter hours of courses representing 12 academic quarters and one summer quarter when students are required to take Geological Field Methods (of-

ferred summers only), a part of the engineering design requirement for ABET accreditation. The curriculum consists of the general freshman requirements of the College of Engineering, rigorous mathematics and chemistry (through organic chemistry, CH 201) and a complement of basic engineering and geology courses.

The objective of the program is to produce graduates prepared to pass the Fundamentals of Engineering (FE) test, and ultimately, the test(s) for registration as a professional engineer and/or professional geologist. Students will also be well prepared for advanced degree programs in engineering or geology. The curriculum emphasizes the physics, chemistry, hydrology and geology of the near-surface portions of the crust, which are the major portions involved with geotechnical, water supply, ground water contamination and waste disposal problems. Subjects related to mining and mineral engineering are not emphasized.

See Curriculum in Geological Engineering (GE) in College of Engineering.

Laboratory Technology and Medical Technology

This curriculum, leading to the degree of Bachelor of Science in Laboratory Technology or Bachelor of Science in Medical Technology, prepares students for medical laboratory careers in fields such as public health, bacteriology, environmental testing, industrial quality control, research and forensic science. Graduates may choose to qualify as certified medical technologists. This is accomplished by successfully completing a 12-month training period (rotating hospital internship) in an accredited School of Medical Technology and passing a national certifying examination.

The requirement for the degree of Bachelor of Science in Laboratory Technology is the successful completion of 12 quarters of the laboratory technology curriculum. Upon graduation a student may enter the work force in a laboratory field or may choose to begin a 12-month training period in a School of Medical Technology. Upon completion of training and successful completion of a national certifying examination, the graduate will be certified as a medical technologist.

The Medical Technology option leads to the Bachelor of Science degree in Medical Technology (conferred by Auburn University). Degree requirements include successful completion of the first nine quarters of the laboratory technology curriculum and of the 12-month period in a School of Medical Technology approved by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS) and by the head of the Department of Chemistry at Auburn University. This school must be affiliated with Auburn University. Graduates of this curriculum should plan to become certified medical technologists by passing one of the national certifying examinations administered by an approved certifying body.

Further requirements for the Medical Technology Option include: (1) Auburn University students transferring into medical technology must complete one academic year (54 hours) in the laboratory technology curriculum preceding the year of internship, and (2) transfers from other institutions must complete the junior year of the laboratory technology curriculum at Auburn prior to internship.

Curriculum in Laboratory Technology (LT)

FRESHMAN YEAR			
First Quarter		Second Quarter	
CH 103 Fund. Chem.	4	CH 104 Fund. Chem.	4
CH 103L Lab	1	CH 104L Lab	1
EH 110 English Comp.	5	MH 161 An. Geom. & Cal.	5
Core History (p. 16)	3	Core History (p. 16)	3
LT 101 Orientation	1	BI 101 Prin. Biology	5
ROTC or Elective	1	ROTC or Elective	1
SOPHOMORE YEAR			
CH 207 Org. Chem.	4	CH 208 Org. Chem.	3
CH 207L Lab	1	CH 208L Lab	2
EH 220 Great Books I	5	U 101 Soc. & Cult.	3
ZY 250 Human Anatomy	5	EH 221 Great Books II	5
Computer Elective *	3	ROTC or Elective	1
ROTC or Elective	1		
JUNIOR YEAR			
LT 301 Hematology I	5	LT 401 Adv. Hematology	5
MB 446 Clin. Microb.	5	MB 543 Immunology	4
U 102 Polit Econ.	3	MB 543L Immuno. Lab	2
CH 305 Anal. Chem.	3	ZY 411 Parasitology	5
CH 305L Lab	2		
SENIOR YEAR			
		LT 405 Immunohem.	5
		EH 400, 404 or 408	5
		U 103 Indiv. in Soc.	3
		DMS 215 or PG 304	5

College of Sciences and Mathematics

SENIOR YEAR

LT 525 Clin. Instr.	5	CH 519 Biochem.	4	CH 520 Clin. Biochem.	5
CH 518 Biochem.	4	MB 405 Intro. Molec. Genetics	4	MB 522 Gene E&R DNA	3
Tech. Elective	6	Tech. Elective	5	MB 522L Lab	2
				Tech. Elective	5

TOTAL - 200 QUARTER HOURS

* Computer Elective: CSE 100, 120, AEC 210, EM 370, U 135 or others approved by advisor.

Technical Electives: BY 505, 514; CH 521; LT 522; MB 542, 556; NFS 318, 502; PS 206, 207; PY 316, 535, ZY 303, 306, 310, 440, 441, 509, 520, 524, 560, 561 and up to six hours advanced ROTC.

Curriculum in Medical Technology (MDT)

FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
CH 103 Fund. Chem.	4	CH 104 Fund. Chem.	4	CH 105 Fund. Chem.	4
CH 103L Lab	1	CH 104L Lab	1	CH 105L Lab	1
EH 110 English Comp.	5	MH 161 An. Geom. & Calc.	5	PA 218 Ethics & Hlth. Sci.	5
Core History (p. 16)	3	Core History (p. 16)	3	Core History (p. 16)	3
LT 101 Orientation	1	BI 101 Prin. Biology	5	PS 200 Fnd. of Physics	5
ROTC or Elective	1	ROTC or Elective	1	ROTC or Elective	1
Core Fine Arts (p. 16)	3				

SOPHOMORE YEAR

CH 305 Anal. Chem.	3	CH 207 Org. Chem.	3	CH 208 Org. Chem.	3
CH 305L Lab	2	CH 207L Lab	2	CH 208L Lab	2
EH 220 Great Books I	5	ZY 251 Physiology	5	MB 300 Microbiology	5
ZY 250 Human Anatomy	5	ZY 300 Genetics	5	U 103 Indiv. in Society	3
U 101 Soc. & Cult.	3	U 102 Polit. Econ.	3	EH 221 Great Books II	5
ROTC or Elective	1	ROTC or Elective	1	ROTC or Elective	1

JUNIOR YEAR

CH 518 Biochemistry	4	CH 519 Biochemistry	4	CH 520 Clin. Biochem.	5
LT 301 Hematology I	5	LT 401 Adv. Hematology	5	LT 405 Immunohemat.	5
MB 446 Clin. Micro.	5	MB 543 Immunology	4	DMS 215 or PG 304	5
Computer Elective *	3	MB 543L Immuno. Lab	2	EH 400 or 404 or 408	5
		ZY 411 Parasitology	5		

MEDICAL TECHNOLOGY OPTION - (PROFESSIONAL YEAR) - A 12-month training program undertaken at an accredited School of Medical Technology.

SENIOR YEAR

MDT 406 Cl. Hematology	6	MDT 402 Cl. Microbiol.	6	MDT 425 Chemistry	8
MDT 408 Immunohemat.	5	MDT 405 Cl. Parasitology	2	MDT 401 Urinalysis	1
		MDT 407 Cl. Serology	2		

TOTAL — 200 QUARTER HOURS

* Computer Elective: CSE 100, 120, AEC 210 or EM 370, U 135 or others approved by advisor.

Mathematics

This curriculum prepares students for graduate study and eventual careers as mathematicians. To graduate with a major in mathematics, a student must have an overall **C** average or better in all mathematics courses attempted above the 100-level, for which a grade other than **W** has been assigned.

Curriculum in Mathematics (MH)

FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
MH 161 An. Geom. & Calc.	5	MH 162 An. Geom. & Calc.	5	MH 163 An. Geom. & Calc.	5
U 101 Soc. & Cult.	3	U 102 Polit. Econ.	3	U 103 Indiv. in Soc.	3
HY 101 or 121	3	HY 102 or 122	3	HY 103 or 123	3
EH 110 Eng. Comp.	5	Elective	5	Core Philosophy (p. 16)	5

SOPHOMORE YEAR

MH 264 An. Geom. & Calc.	5	MH 337 Intr. Lin. Alg.	5	MH 269 Elem. Dif. Eq.	5
EH 220 Great Books I	5	EH 221 Great Books II	5	MH 333 Group Theory	3
Natural Science *	4-5	Natural Science	4-5	Natural Science	4-5
Elective	3	Elective	3	Core Fine Arts (p. 16)	3

JUNIOR YEAR

FL Foreign Lang. **	5	FL Foreign Lang. **	5	FL Foreign Lang.	5
MH 520 Analysis	5	MH 521 Analysis II	5	MH 522 Analysis III	5
MH 334 Intr. Th. Rings	3	MH 533 Elem. Fld. Theory	3	MH 534 Galois Th.	3
EH Adv. Comp. (p. 16)	5	Elective	3	MH Requisite ***	3-5

College of Sciences and Mathematics

SENIOR YEAR

MH Requisite ***	3-5	MH Requisite ***	5	MH Requisite ***	5
MH 550 Intr. Topology	5	Elective (see advisor)	5	Elective (see advisor)	5
Elective (see advisor)	5	Elective (see advisor)	5	Elective (see advisor)	5
Elective (see advisor)	5				

TOTAL — 196 QUARTER HOURS

* The natural science requirement may be met by taking PS 220-221-222 or CH 111-112-113, plus labs. If the 12-hour physics sequence is selected, an additional 3-hour elective will be needed to meet the 196-hour requirement. CH 103, 103L, 104, 104L, 105, 105L are acceptable substitutes for CH 111-112-113 for students who have taken these courses and are transferring into the MH curriculum.

** Required is one year of one language to be chosen from French, German or Russian.

*** MH Requisite: mathematics courses numbered 300 or above subject to approval of advisor.

Applied Mathematics

This is a curriculum suitable for those preparing for graduate work in mathematics as well as for those anticipating careers supported by significant applied mathematics.

An important feature is the option for the student to concentrate, by means of technical electives, on an area to which mathematics can be applied: one of the traditionally allied fields, such as engineering, physical science or computer science; or the more recently allied areas such as the biological, behavioral or managerial sciences. Students using this curriculum in preparing for graduate study in mathematics should be aware of the foreign language requirements for advanced degrees. In order to graduate with a major in mathematics, a student must have an overall C average or better in all mathematics courses attempted above the 100-level, for which a grade other than W has been assigned.

Students who desire more flexibility or emphasis on the liberal arts should pursue the MH curriculum.

Curriculum in Applied Mathematics (AMH)

FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
MH 161 An. Geom. Cal.	5	MH 162 An. Geom. Cal.	5	MH 163 An. Geom. Cal.	5
EH 110 English Comp.	5	Core Fine Arts (p. 16)	3	Core Philosophy (p. 16)	5
HY 101 or 121 (p. 16)	3	HY 102 or 122 (p. 16)	3	HY 103 or 123 (p. 16)	3
Science *	5	Science *	5	PS 220 General Physics I	3
		Elective	3	PS 220L Gen. Phys. Lab	1

SOPHOMORE YEAR

MH 264 An. Geom. Cal.	5	MH 269 Elem. Diff. Eqns.	5	MH 337 Intr. Linear Alg.	5
MH 271 Intr. Math Program	3	PS 222 General Physics III	3	U 101 Soc. & Cult.	3
PS 221 General Physics II	3	PS 222L Gen. Phys. Lab III	1	Group Requisite	3
PS 221L Gen. Physics Lab II	1	EH 221 Great Books II	5	Group Requisite	5
EH 220 Great Books I	5	Group Requisite	3	Elective	3

JUNIOR YEAR

MH 520 Analysis I	5	MH 521 Analysis II	5	MH 522 Analysis III	5
MH 567 Probability Thy.	3	MH 568 Math. Statistics I	3	MH 569 Math. Statistics II	3
MH 333 Elem. Grp. Theory	3	MH 334 Elem. Ring Theory	3	MH 533 Ring & Fid. Theory	3
U 102 Polit Econ.	3	U 103 Indiv. in Soc.	3	EH Eng. Comp. (p. 16)	5
Group Requisite	3				

SENIOR YEAR

MH 563 Intro. Numer. An. I	5	MH 564 Intro. Numer. An. II	5	Math. Requisite	10
Math. Requisite	5	Math. Requisite	5	Group Requisite	5
Group Requisite	3	Group Requisite	3		
Elective	4	Elective	3		

TOTAL — 202 QUARTER HOURS

* CH 103-103L-104-104L or GL 110-111 or BI 101-102 or BI 101-103.

MATHEMATICS REQUISITE. Students will select, in consultation with a departmental advisor, 20 hours of upper division mathematics (MH).

GROUP REQUISITE. A minimum of 25 hours of requisite credit must be taken in areas especially concerned with the application of mathematics. At least 15 hours must be taken in the same area. Primary areas for concentration are: Botany-Zoology, Chemistry, Discrete and Statistical Sciences, Economics, Geology, Physics, Psychology, Aerospace Engineering, Chemical Engineering, Civil Engineering, Computer Science and Engineering, Electrical Engineering, Industrial Engineering and Mechanical Engineering.

Students who wish a concentration in computer science are advised to select courses from the following: EE 330, 335, 430; CSE 200, 220, 230, 350, 360, 400, 405, 412, 440, 505, 512, 520, 521, 522, 523, 525, 530.

Applied Discrete Mathematics

This is an applied discrete mathematics curriculum that prepares students for graduate work in mathematics or theoretical computer science, and for careers in industry supported by modern applied mathematics dealing with problems in graph theory, operations research, discrete optimization, computer science, communications and information sciences.

The curriculum allows flexibility to choose from courses in discrete mathematics, many of which integrate applications of the mathematics with mathematics itself, and provide a foundation in applied analysis and applied algebra. A listing of courses available in discrete mathematics can be found under the Department of Discrete and Statistical Sciences.

An important feature of this curriculum is that students obtain a strong background in computer science, rather than the physics requirement of the traditional applied math curriculum. This emphasis begins in the freshman year, and is continued throughout the curriculum, ending with 15 credit hours of applications in computer science and industrial engineering. Such interdisciplinary requirements give graduates of this program the necessary skills to deal with the diversity of problems arising in industrial careers in discrete mathematics.

Curriculum in Applied Discrete Mathematics (ADM)

FRESHMAN YEAR		
First Quarter	Second Quarter	Third Quarter
MH 161 An. Geom. Cal. 5	MH 162 An. Geom. Cal. 5	MH 163 An. Geom. Cal. 5
EH 110 English Comp. 5	Core Fine Arts (p. 16) 3	Core History (p. 16) 3
Core History (p. 16) 3	Core History (p. 16) 3	CSE 200 Fund. Comp. Sc. I 4
Core Science (p. 16) * 5	Core Science (p. 16) * 5	Core Philosophy (p. 16) 5
SOPHOMORE YEAR		
MH 264 An. Geom. & Cal. 5	MH 266 Lin. Alg. 3	DMS 263 Intro. to Disc. Alg. 3
CSE 220 Fnd. Comp. Sc. II 3	CSE 360 Fnd. Alg. D&A 3	Applied Alg. Requisite 5
U 101 Soc. & Cult. 3	U 102 Polit. Econ. 3	U 103 Indiv. in Soc. 3
EH 220 Great Books I 5	EH 221 Great Books II 5	Interdisc. Requisite 3
Elective 3	Interdisc. Requisite 3	Elective 3
JUNIOR YEAR		
DMS 575 Graph Theory 5	Discrete Math. Requisite 5	Discrete Math. Requisite 5
Applied Alg. Requisite 5	Discrete Math. Requisite 5	EH Composition (p. 16) 5
DMS 560 Statistics I 5	Interdisc. Requisite 5	Interdisc. Requisite 5
SENIOR YEAR		
MH 537 Linear Algebra *** 5	Discrete Math. Requisite 5	Discrete Math. Requisite 5
Discrete Math. Requisite 5	Appl. Analysis Requisite 5	Interdisc. Requisite 6
Appl. Analysis Requisite 5	Interdisc. Requisite 3	Elective 3
	Elective 3	

TOTAL — 194 QUARTER HOURS

* Core science requirement must be met by taking science major options.

** Students may substitute MH 505, with permission of undergraduate advisor.

Applied Algebra Requisite: 10 hours of credit selected from DMS 517, 520 or MH 331.

Discrete Mathematics Requisite: 30 hours of credit in upper division mathematics courses, at least 25 of which must be discrete math courses taken in the Discrete and Statistical Sciences Department.

Applied Analysis Requisite: 10 credit hours to be selected from DMS 500, 530, 561, MH 503, 504, 507, 508, 520, 521, 563. Students contemplating graduate study should consult with the undergraduate advisor on selecting appropriate courses.

Interdisciplinary Requisite: At least 25 hours of credit must be taken in courses at the 200-level or above that are offered by departments in the College of Engineering or the College of Sciences and Mathematics. At least 15 of these 25 hours must be taken in Computer Science and Engineering or Industrial Systems and Engineering.

Microbiology

The Microbiology major is for students who wish to pursue careers in one of the various sub-disciplines of the science or for those preparing for professional degree programs in medicine or veterinary medicine. Required courses provide a strong and broad-based background. Also, students have the opportunity through selection of elective courses to concentrate on special areas of interest, including biotechnology, microbial physiology and genetics and environmental, industrial and health-related aspects of microbiology.

Curriculum in Microbiology (MB)

FRESHMAN YEAR		
First Quarter	Second Quarter	Third Quarter
CH 103 or 111 4	CH 104 or 112 4	CH 105 or 113 4
CH 103L Chem. Lab 1	CH 104L Chem. Lab 1	CH 105L Chem. Lab 1
U 101 Soc. & Cult. 3	U 102 Polit. Econ. 3	U 103 Indiv. in Soc. 3
EH 110 Eng. Comp. 5	MH 161 An. Geom. & Calc. 5	MH 162 An. Geom. & Calc. 5
BI 101 Prin. Biol. 5	BI 102 Plant Biology 5	BI 103 An. Biology 5
SOPHOMORE YEAR		
CH 207 Org. Chem. 4	CH 208 Org. Chem. 3	EH 221 Great Books II 5
CH 207L Chem. Lab 1	CH 208L Chem. Lab 2	Foreign Language 5
EH 220 Great Books I 5	Foreign Language 5	Core Fine Arts (p. 16) 3
ZY 300 Genetics 5	MB 300 Microbiology 5	PS 207 Intr. Physics III 3
PS 205 Intr. Physics I 4	PS 206 Intr. Physics II 4	PS 207L Physics Lab 1
PS 205L Phys. Lab 1	PS 206L Phys. Lab 1	Electives 2

College of Sciences and Mathematics

JUNIOR YEAR

CH 518 Biochemistry	4	MB 543 Immunology	4	Group A/B Elect. *	5
CH 518L Biochem. Lab	1	MB 543L Immunology Lab	2	Core History (p. 16)	3
MB 405 Intro. Molec. Genetics	4	Core History (p. 16)	3	Electives	10
Core History (p. 16)	3	CH 519 Biochemistry	4		
MB 446 Clin. Path. Micro.	6	CH 519L Biochemistry Lab	1		

SENIOR YEAR

MB 540 Microb. Phys.	3	Group A/B Elect. *	15	Group A/B Elect. *	7
Core Philosophy (p. 16)	5			Electives	2
Group A/B Elect. *	8			EH 400 Adv. Comp.	5

TOTAL — 207 QUARTER HOURS

* Students must take 20 hours from Group A and an additional 15 hours from A or B. Group A and B Electives are as follows: **Group A:** MB 460, 495, 504, 522, 522L, 541, 542, 556, 558, CH 521, BY 505, ZY 310, 310L. **Group B:** DMS 215, 501, CH 209, 305, 305L, FAA 423, NFS 543, 545, LT 301, MB 508, MH 163, PLP 309, PY 537, ZY 303, 306, 411, 509, 519, 524, 534, 540, CSE 100, EH 404.

Curriculum in Molecular Biology (MOB)

FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
EH 110 English Comp.	5	BI 101 Prin. of Biology	5	BI 102 Plant Biology	5
Core History (p. 16)	3	Core History (p. 16)	3	Core History (p. 16)	3
MH 161 An. Geom. & Cal.	5	MH 162 An. Geom. & Cal.	5	MH 163 An. Geom. & Cal.	5
CH 111 Gen. Chemistry	4	CH 112 Gen. Chemistry	4	CH 113 Gen. Chemistry	4
CH 111L Gen. Chem. Lab	1	CH 112L Gen. Chem. Lab	1	CH 113L Gen. Chem. Lab	1

SOPHOMORE YEAR

CH 207 Org. Chemistry	4	CH 208 Org. Chemistry	3	CH 209 Org. Chemistry	4
CH 207L Org. Chem. Lab	1	CH 208L Org. Chem. Lab	2	PS 207 Intro. Physics III	3
PS 205 Intro. Physics I	4	PS 206 Intro. Physics II	4	PS 207L Intro. Physics Lab	1
PS 205L Intro. Physics Lab	1	PS 206L Intro. Physics Lab	1	Electives or ROTC	5
BI 103 Animal Biology	5	EH 221 Great Books II	5	ZY 300 Genetics	5
EH 220 Great Books I	5	MB 300 Microbiology	5		

JUNIOR YEAR

MB 405 Intr. Mol. Gen.	4	MB 522 Recomb. DNA	3	CH 316 Physical Chem.	5
ZY 310 Cell Biology	4	MB 522L Rec. DNA Lab	2	EH 400 Adv. Comp.	5
ZY 310L Cell Biol. Lab	2	CH 519 Biochemistry	4	U 103 Indiv. in Soc.	3
CH 518 Biochemistry	4	CH 519L Biochem. Lab	1	Electives or ROTC	5
CH 518L Biochem. Lab	1	U 102 Polit. Econ.	3		
U 101 Soc. & Cult.	3	MOB Electives *	5		

SENIOR YEAR

MOB Elect. *	5	MOB Elect. *	4	MOB Elect. *	5
Special Prob. (see advisor)	3	Special Prob. (see advisor)	3	Special Prob. (see advisor)	3
Core Philosophy (p. 16)	5	Electives	6	Core Fine Arts (p. 16)	3
MB 495/ZY 495/CH 495	1	MB 495/ZY 495/CH 495	1	MB 495/ZY 495/CH 495	1

TOTAL — 206 QUARTER HOURS

* MOB Electives are: DMS 215, 501, BY 514, 550, CH 209L, 305, 305L, 521, CSE 200, MB 540, 542, 543, 543L, 545, 558, MH 264, 265, PS 517, PY 537, ZY 502, 519, 520. During the sophomore year, students will develop a plan of study for the junior and senior years with the assistance and approval of their advisor and dean. Substitutions may be permitted to meet specific needs of individual students.

Physics

Physics majors acquire a firm foundation for careers in physics and related fields and excellent preparation for further study. Through the judicious use of electives, this curriculum provides not only a thorough understanding of physics, but also the ability to solve problems in other fields of interest to the student. Graduates find opportunities in industrial and government research and development; chemical, geological, biological and mathematical physics; medical and dental research; environmental science; and teaching and/or research at the college or university level.

Curriculum in Physics (PS)

FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
PS 170 Phys. I (w. Calc.)	4	PS 171 Phys. II (w. Calc.)	4	PS 172 Phys. III (w. Calc.)	4
PS 170L Phys. I Lab	1	PS 171L Phys. II Lab	1	PS 172L Phys. III Lab	1
MH 191 Cal. for E & S	5	MH 192 Cal. for E & S	5	MH 193 Cal. for E & S	5
CSE 120 Comp. Prog.	3	Core Fine Arts (p. 16)	3	EH 110 English Comp.	5
Core Ethics or Logic (p. 16)	5	Core History (p. 16)	3	Core History (p. 16)	3

SOPHOMORE YEAR

PS 320 Mod. PS for Engr.	3	PS 310 Mechanics I	5	PS 311 Mechanics II	5
PS 320L Mod. Phys. Engrs. Lab.	1	MH 269 Elem. Diff. Eq.	5	U 102 Political Economy	3
MH 294 Cal. for E & S	5	Elective (b)	3	MH 362 Engr. Math	4
MH 337 Intro. to Lin. Alg.	5	U 101 Society & Culture	3	EH 220 Great Books I	5
PS 412 Sem. in Mod. Phys.	1	PS 412 Sem. in Mod. Phys.	1	PS 412 Sem. in Mod. Phys.	1
Core History (p. 16)	3				

College of Sciences and Mathematics

JUNIOR YEAR

MH 501 Calc. of Vect. 3	PS 510 Elec. & Magn. I 4	PS 511 Elec. & Magn. II 4
Elective (MH, PS or Eng.) (c) 5	EH 221 Great Books II 5	MH 506 Part. Diff. Eq. 3
PS 515 Int. Mod. Phys. I 5	PS 516 Int. Mod. Phys. II 5	EH 400 Advanced Comp. 5
U 103 Individual in Society 3	PS 412 Sem. in Mod. Phys. 1	Elective (MH, PS or Eng.) (c) 5
PS 412 Sem. in Mod. Phys. 1		PS 412 Sem. in Mod. Phys. 1

SENIOR YEAR

Elective (b) 3	PS 506 Exp. Phys. I 2	Elective (MH, PS or Eng.) (c) 5
PS 306 Physics Lab 2	Elective (MH, PS or Eng.) (c) 5	PS 507 Exp. Phys. II 2
Science Elec. (BI, GI, CH) (a) 5	Science Elec. (BI, GI, CH) (a) 5	Science Elec. (BI, GI, CH) (a) 5
PS 504 Stat. Thermo. 5	Elective (MH, PS or Eng.) (c) 5	PS 412 Sem. in Mod. Phys. 1
PS 412 Sem. in Mod. Phys. 1	PS 412 Sem. in Mod. Phys. 1	

TOTAL — 202 QUARTER HOURS

Physics Electives. First Quarter: PS 302, 531, 545; Second Quarter: PS 521, 532, 535; Third Quarter: PS 303, 533, 520, 575.

- The science elective may be met by selecting a total of 15 hours of chemistry, biology or geology. The student may choose to concentrate on one area or to take one course from each area.
- Appropriate electives to meet the interests of the student may be selected in consultation with the departmental advisor. Selections can be used for ROTC courses.
- Math. electives may be chosen from the following: MH 337; MH 517 or 518; 503 or 504.

Zoological Sciences

These curricula prepare students for graduate study and a variety of careers in animal biology. The student has the choice of five degree programs including two pre-veterinary medicine options: Zoology, Zoology/Pre-vet, Wildlife Science, Wildlife Science/Pre-vet and Marine Biology.

Curriculum in Zoology (ZY)

FRESHMAN YEAR

First Quarter				Second Quarter				Third Quarter			
BI	101 Prin. of Biology	5	CH	103 Fund. Chem. I *	4	BI	103 Animal Biology	5			
EH	110 Eng. Comp.	5	CH	103L Gen. Chem. Lab	1	CH	104 Fund. Chem. II	4			
MH	161 An. Geom. & Cal.	5	MH	162 An. Geom. & Cal.	5	CH	104L Gen. Chem. Lab	1			
U	101 Soc. & Cult.	3	BI	102 Plant Biology	5	U	103 Indiv. in Soc.	3			
			U	102 Polit Econ.	3	HY	101 World History (p. 16)	3			
						COM	100 Prof. Comm.	3			

SOPHOMORE YEAR

CH 207 Org. Chemistry 4	CH 208 Org. Chemistry 3	PS 206 Intr. Physics II 4
CH 207L Org. Chem. Lab. 1	CH 208L Org. Chem. Lab. 2	PS 206L Intr. Phys. Lab. II 1
ZY 300 Genetics 5	PS 205 Intr. Physics I 4	Core Fine Arts (p. 16) 3
ZY 303 Evolution & Syst. 5	PS 205L Intr. Phys. Lab. I 1	EH 221 Great Books II 5
HY 102 World History (p. 16) 3	EH 220 Great Books I 5	GL 110 Phys. Geology 5
	HY 103 World History (p. 16) 3	

JUNIOR YEAR

PS 207 Intr. Physics III 3	ZY 401 Invert. Zoology 5	Foreign Lang. 5
PS 207L Intr. Physics Lab. III 1	Computer Sci. 3	ZY 306 Ecology 5
GL 111 Hist. Geology 5	DMS 501 Biostats. 5	EH 400 Adv. Comp. 5
ZY 310 Cell Biology 4	ZY 301 Comp. Anat. 5	
ZY 310L Cell Biol. Lab. 2		

SENIOR YEAR

Foreign Lang. 5	Foreign Lang. 5	Zoology Elect. 15
ZY 402 Nat. Hist. Vert. 5	ZY 524 Animal Physiol. 5	General Electives or ROTC 3
Botany Elective 5	Core Philosophy (p. 16) 5	

TOTAL — 205 QUARTER HOURS

* Chemistry may also be started with CH 101. See advisor for details.

Six hours of advanced ROTC may be substituted for the third quarter of the foreign language plus the one hour of elective in the third quarter of the senior year.

Curriculum in Wildlife Science (WL)

FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
BI 101 Prin. Biology	5	BI 102 Plant Biology	5	BI 103 Animal Biology	5
CH 103 Fund. Chem. I *	4	CH 104 Fund. Chem. II	4	COM 100 Prof. Comm.	3
CH 103L Gen. Chem. Lab.	1	CH 104L Gen. Chem. Lab.	1	EH 110 Eng. Comp.	5
MH 161 An. Geom. & Cal.	5	CSE 100 Intro. PC Appl.	3	Core History (p. 16)	3
Core History (p. 16)	3	Core History (p. 16)	3	ROTC or Elective	1
ROTC or Elective	1	ROTC or Elective	1		

SOPHOMORE YEAR

CH 203 Org. Chemistry 5	ZY 300 Genetics 5	EH 221 Great Books II 5
DMS 215 Intro. Biol. Stat. 5	ZY 303 Evol. & Syst. 5	ZY 306 Prin. of Ecol. 5
ZY 205 Wildlife Cons. 3	EH 220 Great Books I 5	Core Philosophy (p. 16) 5
PS 200 Found. Physics 5	ROTC or Elective 1	ROTC or Elective 1
ROTC or Elective 1		

College of Sciences and Mathematics

JUNIOR YEAR

ZY 328 Prin. Wildl. Mgt.	4	ZY 524 An. Physiol.	5	EH 400 Adv. Comp.	5
ZY 328L Wildl. Mgt. Lab.	1	U 102 Polit Econ.	3	U 103 Indiv. in Soc.	3
BY 506 Syst. Botany	5	ENT 304 Gen. Entomology	5	BY 513 Plant Ecology	5
AY 304/7 Gen. Soils	5	Core Fine Arts (p. 16)	3	ZY 574 Herpetology	5
U 101 Soc. & Cult.	3				

SENIOR YEAR

FY 523 Silviculture	4	ZY 401 Inv. Zoology	5	FY 460 Wild. Rc. Pol.	3
ZY 522 Wildl. P&P	3	ZY 528 Wildl. Biology	5	ZY 575 Ornithology	5
ZY 576 Mammalogy	5	ZY 528L Wildl. Bio. Lab.	2	ZY 531 Wildl. Hab. An.	3
EH 304 Tech. Writing	5	DMS 501 Biol. Stats.	5	FY 542 For. Policy	3
				ZY 433 Fish Wild. Law	1

TOTAL — 205 QUARTER HOURS

* Chemistry may also be started with CH 101. See advisor for details.

Students are required to graduate with the minimum educational requirements necessary to be eligible for certification by the Wildlife Society as an Associate Wildlife Biologist. Deviation from this model may jeopardize this eligibility. Consult your advisor before scheduling alternative courses.

Curriculum in Marine Biology (MRB)

FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
BI 101 Prin. of Biology	5	CH 103 Fund. Chem. I *	4	BI 103 Animal Biology	5
EH 110 Eng. Comp.	5	CH 103L Gen. Chem. Lab.	1	CH 104 Fund. Chem. II	4
MH 161 An. Geom. & Cal.	5	MH 162 An. Geom. & Cal.	5	CH 104L Gen. Chem. Lab.	1
U 101 Soc. & Cult.	3	BI 102 Plant Biology	5	U 103 Indiv. in Soc.	3
		U 102 Polit Econ.	3	HY 101 World History (p. 16)	3

SOPHOMORE YEAR

CH 207 Organic Chem.	4	CH 208 Organic Chem.	3	GL 110 Phys. Geology	5
CH 207L Org. Chem. Lab.	1	CH 208L Org. Chem. Lab.	2	PS 206 Intr. Phys. II	4
ZY 300 Genetics	5	PS 205 Intr. Phys. I	4	PS 206L Intr. Phys. Lab. II	1
EH 220 Great Books I	5	PS 205L Intr. Phys. Lab I	1	HY 103 World History (p. 16)	3
HY 102 World History (p. 16)	3	COM 100 Prol Comm.	3	EH 221 Great Books II	5
		Core Philosophy (p. 16)	5		

JUNIOR/SENIOR YEAR

On Campus: BY 513 Plant Ecology (5), DMS 501 Biol. Stats. (5), EH 400 Adv. Comp. (5), MB 300 Gen. Microbiol. (5), PS 207 Intr. Phys. III (3), PS 207L Intr. Phys. Lab III (1), ZY 303 Evol. & Syst. (5), ZY 306 Prin. of Ecol. (5), ZY 310 Cell Biology (4), ZY 401 Inv. Zoology (5), ZY 402 Nat. Hist. of Vert. (5), ZY 524 An. Physiology (5), ZY Elective (5), Core Fine Arts (p. 16) (3), FL Foreign Language (10), General Elective or ROTC (5).

Off Campus: (At an approved marine lab) ZY 201 or equivalent (6), GL 120 or equivalent (3), plus 18 credit hours (see advisor for options).

TOTAL — 209 QUARTER HOURS

* Chemistry may also be started with CH 101. See advisor for details.

Pre-Professional Curricula

Pre-professional curricula are offered in pre-dentistry, pre-medicine, pre-optometry, pre-physical therapy, pre-pharmacy and pre-veterinary medicine. Advisors are available in each curriculum to guide the students concerning admissions requirements to the professional schools. The department in which students major will advise them where applicable. Completion of these curricula does not assure admission to a professional school. Competition for admission to professional schools is keen; the number of qualified applicants exceeds the number of places available.

Pre-Dentistry and Pre-Medicine

This curriculum leads to a Bachelor of Science degree and is designed to prepare students for medical and dental schools. The requirements are very exacting and demand high scholastic competence and performance. As a minimum, students must strive for a B-plus four-year college record to attain good promise of being selected by a professional school.

The bachelor's degree is required by most dental and medical schools for admission; however, should outstanding students gain admission to a dental or medical school prior to graduation, they may receive a combination B.S. degree by completing successfully the first nine quarters of this curriculum, a total of 157 quarter hours, and the freshman year of professional school.

Students in pre-dentistry or pre-medicine should take the national Dental Aptitude Test or the Medical College Admission Test at least a year in advance of the date of entry to professional school, and follow with applications to the professional schools of their choice. Early in the junior year, the student should seek information from the chairman of the Pre-medical/Pre-dental Advisory Committee concerning procedures to follow to obtain the necessary committee evaluation

and recommendation to professional school. Forms and instructions are available in the office of the Dean of Sciences and Mathematics. Most American medical schools recommend that medical and dental school applicants have (1) an academic year each of freshman biology, general chemistry, organic chemistry, and physics; (2) breadth in the educational experience; and (3) in-depth experience in a single discipline. Auburn University students accomplish the above by enrolling in a core of 151 hours as outlined in the following curriculum model. Each student then elects an area of concentration from the College of Sciences and Mathematics (see list below). Depending upon this choice, individuals will have up to 29 hours of electives. Students may also choose to major in a curriculum in another college or school, but they must work with the Assistant Dean for Pre-Health Professions in COSAM for information on the application process.

Curriculum in Pre-Dentistry (PD), Pre-Medicine (PM)

FRESHMAN YEAR			FRESHMAN YEAR			FRESHMAN YEAR		
First Quarter			Second Quarter			Third Quarter		
CH 111 Gen. Chemistry *	4		CH 112 Gen. Chemistry	4		CH 113 Gen. Chemistry	4	
CH 111L Gen. Chem. Lab	1		CH 112L Gen. Chem. Lab	1		CH 113L Gen. Chem. Lab	1	
MH 161 An. Geom. & Cal.	5		MH 162 An. Geom. & Cal.	5		MH 163 An. Geom. & Cal. ***	5	
Foreign Lang. **	5		EH 110 English Comp.	5		COM 100 Prof. Comm.	3	
SM 199 Orientation	1		Core Fine Arts (p. 16)	3		BI 101 Prin. Biol.	5	
HY 101 World History (p. 16)	3							
SOPHOMORE YEAR								
CH 207 Org. Chem.	4		CH 208 Org. Chem.	3		CH 209 Org. Chem.	4	
CH 207L Chem. Lab	1		CH 208L Chem. Lab	2		ZY 300 Genetics	5	
PS 205 Physics I ****	4		PS 206 Physics II	4		PS 207 Physics III	3	
PS 205L Phys. Lab	1		PS 206L Phys. Lab	1		PS 207L Phys. Lab	1	
HY 102 World History (p. 16)	3		HY 103 World History (p. 16)	3		EH 221 Great Books II	5	
BI 103 Animal Biology	5		EH 220 Great Books I	5				
JUNIOR YEAR								
ZY 302 Vert. Embryology	5		ZY 310 Cell Biology	4		Computer Sci.	3	
EH 400 Adv. Comp.	5		ZY 310L Biol. Lab	2		Major/Conc.	10	
U 101 Soc. & Cult.	3		U 102 Polit Econ.	3		U 103 Indiv. in Soc.	3	
Major/Conc./Elect.	2		PA 218 Ethics & Hlth. Sci.	5				
			Major/Conc.	5				
SENIOR YEAR								
Major/Conc.	10		Major/Conc.	5		Major/Conc./Elect.	15	
Major/Conc./Elect.	5		Major/Conc./Elect.	10				

TOTAL — 204 QUARTER HOURS

* Chemistry may also be started with CH 101 or 103; see advisor for details.

** Students are encouraged to enroll in a foreign language to capitalize on a strong high school experience. Any foreign language is acceptable. Foreign language is required only in the Biomedical Sciences Option. Basic ROTC may be taken as an elective.

*** Students may substitute a course in statistics (DMS 215, 501 or PG 304) for MH 163.

**** Students planning a physics concentration should take PS 220-221-222 instead of PS 205-206-207.

SCIENCES AND MATHEMATICS CONCENTRATION AREAS

Biomedical Sciences: CH 316, 518, 519, MB 300, 543, ZY 560, 561 and 301 or 509, one year of foreign language and three credits of special problems.

Botany: BI 102, BY 306, and 20 additional hours from BY 505, 506, 513, 514, 535, 536 and 554.

Chemistry: Select 30 hours from CH 305, 305L, 316(a), 490, 507(a), 508, 509, 510, 513, 518, 519, 520, 521 and MH 264(b).

Geology: GL 110, 111, 206, 240, 301 and five additional GL hours at the 200-level or above.

Mathematics: MH 264, 269, 337, 331, 520, and one course from MH 332, 521, 563 or 564.

Microbiology: MB 300, 446, 542 and an additional 15 hours from 400-500 level MB courses.

Physics: Select 30 hours from MH 264, 266, 269, 501, PS 300, 301, 302, 303, 305(c), 306, 320(c).

Zoology: Select 15 hours from ZY 303, 306, 401, 402 and an additional 15 hours from ZY 301, 509, 411, 524(d), 560(d) or 561.

(a) Credit cannot be earned for both CH 316 and 507.

(b) MH 264 will count toward the 30 hours only if it is a prerequisite for a chemistry course that is taken.

(c) Credit cannot be earned for both PS 305 and 320.

(d) Credit cannot be earned for both ZY 524 and 560.

Pre-Optometry

This curriculum leads to a Bachelor of Science degree and prepares students for the rigorous demands of American optometry schools. The requirements are exacting and demand high scholastic competence and performance. As a minimum, students must strive for a B-plus four-year college record to attain good promise of being selected by a professional school.

Each student must either select an area of concentration (see lists below the pre-medicine curriculum model) from the College of Sciences and Mathematics or a major from any other college or school. Students must work with the Assistant Dean for Pre-Health Professions in COSAM in planning their applications.

Students with outstanding records who are able to gain admission to an accredited school of optometry before graduation may also qualify for the B.S. degree by completing success-

fully the first nine quarters of this curriculum, a total of 156 quarter hours, plus the freshman year of professional optometry school.

Pre-Optometry students should write for an official bulletin from each of the professional schools of their choice during the freshman year and discuss with the Pre-Optometry advisor any special requirements of those schools. The requirements of most U.S. schools of optometry are covered in the suggested program below, either as required subjects or as electives. The student should take the Optometry College Admission Test and make official application for admission to the professional schools about a year in advance of the expected date of matriculation.

Curriculum in Pre-Optometry (OP)

FRESHMAN YEAR		
First Quarter	Second Quarter	Third Quarter
CH 103 Gen. Chemistry * 4	CH 104 Gen. Chemistry 4	CH 105 Gen. Chemistry 4
CH 103L Gen. Chem. Lab 1	CH 104L Gen. Chem. Lab 1	CH 105L Gen. Chem. Lab 1
MH 161 An. Geom. & Cal. 5	MH 162 An. Geom. & Cal. 5	PG 212 Psychology 5
EH 110 Eng. Comp. 5	COM 100 Prof. Comm. 3	HY 101 World History (p. 16) 3
SM 199 Orientation 1	Core Fine Arts (p. 16) 3	BI 101 Prin. Biol. 5
ROTC or Elective 1	ROTC or Elective 1	ROTC or Elective 1
SOPHOMORE YEAR		
CH 207 Org. Chem. 4	CH 208 Org. Chem. 3	PG 304 Quant. Meth. 5
CH 207L Chem. Lab 1	CH 208L Chem. Lab 2	ZY 300 Genetics 5
PS 205 Physics I ** 4	PS 206 Physics II 4	PS 207 Physics III 3
PS 205L Phys. Lab 1	PS 206L Phys. Lab 1	PS 207L Phys. Lab 1
HY 102 World History (p. 16) 3	HY 103 World History (p. 16) 3	EH 221 Great Books II 5
BI 103 Animal Biology 5	EH 220 Great Books I 5	ROTC or Elective 1
ROTC or Elective 1	ROTC or Elective 1	
JUNIOR YEAR		
ZY 302 Vert. Embryology 5	ZY 310 Cell Biology 4	MB 300 Microbiology 5
EH 400 Adv. Comp. 5	ZY 310L Biol. Lab 2	Major/Concen. 5
U 101 Soc. & Cult. 3	U 102 Polit Econ. 3	U 103 Indiv. in Soc. 3
Computer Science 3	PA 218 Ethics & Hlth. Sci. 5	Elective 1
	Major/Concen. ** 5	
SENIOR YEAR		
Major/Concen. 10	Major/Concen. 10	Major/Concen./Elect. 15
Major/Concen./Elect. 5	Major/Concen./Elect. 4	

TOTAL — 204 QUARTER HOURS

* Chemistry may also be started with CH 101; see advisor for details.

** Students planning a physics concentration should take PS 220-221-222 instead of PS 205-206-207.

*** At the end of the sophomore year, the student must declare a concentration in the College of Sciences and Mathematics (see list in the pre-medicine curriculum model) or a major in another college.

Pre-Physical Therapy

At present, many schools, including the University of Alabama-Birmingham, require a baccalaureate degree for entry into physical therapy at the master's or certificate level. Students applying to schools of physical therapy at the master's level or certificate level should complete the following curriculum model leading to a bachelor's degree or choose a major in another curriculum and fulfill only the minimum requirements for physical therapy programs. Students should write for an official bulletin from each of the professional schools of their choice during their freshman year and discuss with the pre-physical therapy advisor any special requirements of those schools.

Students applying to a two-year B.S. program in physical therapy should plan their schedules with the advisor to satisfy the requirements of their chosen school.

Curriculum in Pre-Physical Therapy (PT)

FRESHMAN YEAR		
First Quarter	Second Quarter	Third Quarter
CH 103 Gen. Chemistry * 4	CH 104 Gen. Chemistry 4	CH 105 Gen. Chemistry 4
CH 103L Gen. Chem. Lab 1	CH 104L Gen. Chem. Lab 1	CH 105L Gen. Chem. Lab 1
MH 161 An. Geom. & Cal. 5	MH 162 An. Geom. & Cal. 5	PG 212 Psychology 5
EH 110 Eng. Comp. 5	COM 100 Prof. Comm. 3	HY 101 World History (p. 16) 3
SM 199 Orientation 1	Core Fine Arts (p. 16) 3	BI 101 Prin. Biol. 5
ROTC or Elective 1	ROTC or Elective 1	ROTC or Elective 1
SOPHOMORE YEAR		
CH 207 Org. Chem. 4	CH 208 Org. Chem. 3	PG 304 or DMS 215 5
CH 207L Chem. Lab 1	CH 208L Chem. Lab 2	ZY 300 Genetics 5
PS 205 Physics I ** 4	PS 206 Physics II 4	PS 207 Physics III 3
PS 205L Phys. Lab 1	PS 206L Phys. Lab 1	PS 207L Phys. Lab 1
HY 102 World History (p. 16) 3	HY 103 World History (p. 16) 3	EH 221 Great Books II 5
BI 103 Animal Biology 5	EH 220 Great Books I 5	ROTC or Elective 1
ROTC or Elective 1	ROTC or Elective 1	

College of Sciences and Mathematics

JUNIOR YEAR

ZY 250 Hum. Anatomy	5	ZY 251 Hum. Physiology	5	MB 300 Microbiology	5
EH 400 Adv. Comp.	5	Major/Concen. ***	5	PG 356 Abnormal Psych.	5
U 101 Soc. & Cult.	3	U 102 Polit Econ.	3	U 103 Indiv. in Soc.	5
Computer Science	3	PA 218 Ethics & Hlth. Sci.	5	Elective	1

SENIOR YEAR

Major/Concen.	10	Major/Concen.	10	Major/Concen./Elect.	10
Major/Concen./Elect.	5	Major/Concen./Elect.	5	Major/Concen.	5

TOTAL — 204 QUARTER HOURS

- * Chemistry may also be started with CH 101; see advisor for details.
 ** Students planning a physics concentration should take PS 220-221-222 instead of PS 205-206-207.
 *** At the end of the sophomore year, the student must declare a concentration in the College of Sciences and Mathematics (see list in the pre-medicine curriculum model) or a major in another college.

Pre-Pharmacy

This curriculum meets the requirements for admission to the Auburn University School of Pharmacy, which is fully accredited by the American Council on Pharmaceutical Education. Complete information about the professional curriculum in pharmacy may be found in the School of Pharmacy section.

To be considered for admission, the applicant must complete the basic two-year requirements below and must have a 2.5 (C) GPA based on all courses attempted as well as a 2.5 (C) science index (GPA on the biological and physical science courses and mathematics). A grade of D in any required course will not be accepted. A student who does not qualify for admission to the School of Pharmacy after the completion of eight quarters in pre-pharmacy at Auburn University, but who meets University continuation in residence requirements may continue to register in pre-pharmacy only by special permission of the Dean of Sciences and Mathematics.

Curriculum in Pre-Pharmacy (PPY)

FRESHMAN YEAR

First Quarter		Second Quarter		Third Quarter	
CH 111 Gen. Chem. *	4	CH 112 Gen. Chem.	4	CH 113 Gen. Chem.	4
CH 111L Chem. Lab	1	CH 112L Chem. Lab	1	CH 113L Chem. Lab	1
MH 161 Calculus	5	Core Fine Arts (p. 16)	3	Core History (p. 16)	3
Core History (p. 16)	3	EH 110 Eng. Comp.	5	BI 101 Prin. Biol.	5
ROTC or Elective	3	Core History (p. 16)	3	PA 218 Ethics	5

SOPHOMORE YEAR

CH 207 Org. Chem.	4	CH 208 Org. Chem.	3	DMS 215 Intro. Statistics	5
CH 207L Chem. Lab	1	CH 208L Chem. Lab	2	MB 300 Microbiology	5
PS 205 Physics I	4	U 102 Polit Econ.	3	ZY 250 Hum. Anatomy	5
PS 205L Phys. Lab	1	EH 221 Great Books II	5	U 103 Indiv. in Soc.	3
U 101 Soc. & Cult.	3	Elective **	4		
EH 220 Great Books I	5				

TOTAL — 103 QUARTER HOURS

- * Chemistry may be started with CH 101 or 103. See advisor for details.
 ** The entire PS 205, 206 and 207 sequence or an advanced physics course beyond PS 205 is recommended.

Pre-Veterinary Medicine

Students in the Pre-Veterinary Medicine (PV) curriculum must select a major by the end of their sixth quarter. Students in Sciences and Mathematics may select microbiology (VMB), wildlife (VWL) or zoology (VZY) as majors. Pre-Veterinary options in the College of Agriculture include animal and dairy science (ADPV) poultry science (PHPV), and fisheries (FPV). The minimum requirements for admission to the College of Veterinary Medicine at Auburn University (113 hours) are incorporated into the curriculum models for all these majors. Those special requirements are: EH Comp., p. 16 (10); World History, p. 16 (9); Literature, p. 16 (10); Mathematics, p. 16 (5); Philosophy, p. 16 (5); Social Science, p. 16 (9); Fine Arts, p. 16 (3); CH 207, 208 (10); BI 101, 103 (10); CH 103, 104, 105 (15); Scientific Electives (8); PS 205, 206, 207 (14); ADS 321 (5).

It is possible to gain admission to the College of Veterinary Medicine by completing only the minimum requirements listed above. However, it is preferable to select a major and earn a baccalaureate degree. If a student is admitted to the College of Veterinary Medicine prior to completion of the full four years, he or she may obtain a B.S. degree by successfully completing the first nine quarters of any one of the Pre-Veterinary curricula and the first year of veterinary school.

Application for admission to the College of Veterinary Medicine must be submitted to the Dean of that College. A minimum GPA of 2.5 is required for application; D grades in required courses are unacceptable. All minimum requirements, including courses repeated due to time limitations, must be completed by the end of the spring quarter preceding the date of admission, and all advanced required courses in physical and biological sciences (organic chemistry and physics)

must have been completed within six calendar years prior to the anticipated entrance date. Competition for admission to the professional schools is keen with the number of qualified applicants exceeding the number of places available. For additional information, see College of Veterinary Medicine section and the Pre-Veterinary Medicine curricula in the College of Agriculture.

Curriculum in Pre-Veterinary Medicine (PV)

FRESHMAN YEAR			Third Quarter		
First Quarter			Second Quarter		
CH 103 Fund. Chem. *	4	CH 104 Fund. Chem. *	4	CH 105 Fund. Chem. *	4
CH 103L Chem. Lab	1	CH 104L Chem. Lab	1	CH 105L Chem. Lab	1
U 101 Soc. & Cult.	3	U 102 Polit Econ.	3	U 103 Indiv. in Soc.	3
MH 160 Pre-Calc. w/Trig. **	5	BI 101 Prin. Biol.	5	BI 103 Animal Biology	5
EH 110 Eng. Comp.	5	Core Fine Arts (p. 16)	3	Tech. Elective (see advisor)	5
ROTC or Elective	1	ROTC or Elective	1	ROTC or Elective	1
SOPHOMORE YEAR			JUNIOR YEAR		
CH 207 Org. Chem.	4	CH 208 Org. Chem.	4	Core Philosophy (p. 16)	5
CH 207L Chem. Lab	1	CH 208L Chem. Lab	2	Tech. Elective (see advisor)	5
PS 205 Intr. Phys. I	4	PS 206 Intr. Phys. II	4	PS 207 Intr. Phys. III	3
PS 205L Phys. Lab	1	PS 206L Phys. Lab	1	PS 207L Phys. Lab	1
EH 220 Great Books I	5	EH 221 Great Books II	5	Core History (p. 16)	3
Core History (p. 16)	3	Core History (p. 16)	3	ROTC or Elective	1
ROTC or Elective	1	ROTC or Elective	1		
Tech. Elective (see advisor)	5	Tech. Elective (see advisor)	5	Major	5
ADS 321 An. Bio. & Nutr.	5	EH 400 Adv. Comp.	5	Major	5
MB 300 Microbiology	5	Major	5	Major/Elect.	5
Major/Elect.	5	Major	5	Major/Elect.	3

TOTAL — 170 QUARTER HOURS

* Chemistry may also be started with CH 101 or CH 111. See advisor for details.

** Many students are prepared to begin calculus. Students are urged to take additional calculus courses if they plan to select a major in the College of Sciences and Mathematics.

Curriculum in Microbiology Pre-Veterinary Medicine Option (VMB)

FRESHMAN YEAR			Third Quarter		
First Quarter			Second Quarter		
CH 103 Fund. Chem. *	4	CH 104 Fund. Chem. *	4	CH 105 Fund. Chem. *	4
CH 103L Chem. Lab	1	CH 104L Chem. Lab	1	CH 105L Chem. Lab	1
U 101 Soc. & Cult.	3	U 102 Polit Econ.	3	U 103 Indiv. in Soc.	3
BI 101 Prin. Biol.	5	BI 103 Animal Biology	5	BI 102 Plant Biol.	5
EH 110 Eng. Comp.	3	MH 161 An. Geom. & Calc.	5	Tech. Elective	5
SOPHOMORE YEAR			JUNIOR YEAR		
CH 207 Org. Chem.	4	CH 208 Org. Chem.	3	ZY 300 Genetics	5
CH 207L Chem. Lab	1	CH 208L Chem. Lab	2	Core Fine Arts (p. 16)	3
EH 220 Great Books I	5	EH 221 Great Books II	5	PS 207 Intr. Phys. III	3
ADS 321 An. Bio. & Nutr.	5	MB 300 Microbiology	5	PS 207L Phys. Lab	1
PS 205 Intr. Phys. I	4	PS 206 Intr. Phys. II	4	Core Philosophy (p. 16)	5
PS 205L Phys. Lab	1	PS 206L Phys. Lab	1		
JUNIOR YEAR			SENIOR YEAR		
MB 446 Clin./Path. Micro.	5	MB 543 Immunology	4	Core History (p. 16)	3
MB 405 Intro. Molec. Genetics	4	MB 543L Immunology Lab	2	Elective	8
CH 518 Biochemistry	4	Core History (p. 16)	3	EH 400 Adv. Comp.	5
CH 518L Biochem. Lab	1	CH 519 Biochemistry	4		
Core History (p. 16)	3	CH 519L Biochemistry Lab	1		
SENIOR YEAR			TOTAL — 204 QUARTER HOURS		
Foreign Language	5	Foreign Language	5	Group A/B Elective	7
Group A/B Electives **	10	Group A/B Electives	12	Elective	6
MB 540 Micro. Phys.	3				

* CH 111-112-113 series may substitute for 103-104-105.

** Students must take 15 hours from Group A and an additional 14 hours from A and/or B.

Group A: MB 460, 522, 541, 542, 556.

Group B: DMS 215, BY 505, 514, CH 209, 305, 305L, 520, EH 104, FAA 423, HF 543, 545, LT 301, MB 508, MH 163, PLP 309, PY 537, ZY 411, 519, CSE 100.

Curriculum in Wildlife Science Pre-Veterinary Medicine Option (VWL)**FRESHMAN YEAR****First Quarter**

CH	103 Fund. Chem. I *	4
CH	103L Gen. Chem. Lab	1
U	101 Soc. & Cult.	3
MH	161 An. Geom. & Cal.	5
BI	101 Prin. of Biology	5

Second Quarter

EH	110 Eng. Comp.	5
CH	104 Fund. Chem. II	4
CH	104L Gen. Chem. Lab	1
U	102 Polit. Econ.	3
BI	102 Plant Biology	5

Third Quarter

CH	105 Fund. Chem. III	4
CH	105L Gen. Chem. Lab	1
U	103 Indiv. in Soc.	3
BI	103 Animal Biology	5
	General Elective or ROTC	5

SOPHOMORE YEAR

CH	207 Organic Chem.	4
CH	207L Org. Chem. Lab	1
PS	205 Int. Phys. I	4
PS	205L Phys. Lab	1
EH	220 Great Books I	5
ZY	205 Wildl. Cons.	3

CH	208 Organic Chem.	3
CH	208L Org. Chem. Lab	2
PS	206 Intro. Physics II	4
PS	206L Physics Lab	1
	Core Fine Arts (p. 16)	3
EH	221 Great Books II	5

ZY	300 Genetics	5
PS	207 Intr. Phys. III	3
PS	207L Physics Lab	1
	General Elective or ROTC	3
	Core Philosophy (p. 16)	5

JUNIOR YEAR

ZY	306 Prin. of Ecol.	5
ZY	328 Prin. of Wildl.	4
ZY	328L Wildl. Mgmt. Lab	1
ZY	402 Nat. Hist. Vert.	5
HY	101 World History (p. 16)	3

EH	400 Adv. Comp.	5
ADS	321 An. Biochem.	5
ZY	528 Wildl. Biol.	5
ZY	528L Wildl. Biol. Lab	2
HY	102 World History (p. 16)	3

MB	300 Microbiology	5
	General Elective or ROTC	7
HY	103 World History (p. 16)	3
COM	100 Prof. Comm.	3

SENIOR YEAR

ZY	303 Evol. & Syst.	5
FY	523 Silviculture	4
BY	506 Syst. Botany	5

ZY	524 Anim. Physiology	5
ZY	401 Invert. Zoology	5
ZY	576 Mammalogy	5

ZY	531 Wildl. Hab. Anal.	3
ZY	575 Ornithology	5
DMS	501 Biol. Stats.	5

TOTAL — 205 QUARTER HOURS

* Chemistry may also be started with CH 101. See advisor for details.

In the event the first-year Veterinary College alternative is not followed, the indicated senior year courses must be completed successfully to earn the B.S. degree in Wildlife Science:

Note: The B.S. degree in Wildlife Science Pre-Veterinary Medicine does not qualify the student for certification as associate wildlife biologist by the Wildlife Society. See advisor for information on certification requirements.

Curriculum in Zoology Pre-Veterinary Medicine Option (VZY)**FRESHMAN YEAR****First Quarter**

CH	103 Fund. Chem. I *	4
CH	103L Gen. Chem. Lab	1
U	101 Soc. & Cult.	3
MH	161 An. Geom. & Cal.	5
BI	101 Prin. of Biology	5

Second Quarter

U	102 Polit. Econ.	3
CH	104 Fund. Chem. II	4
CH	104L Gen. Chem. Lab	1
	Core Fine Arts (p. 16)	3
BI	103 Animal Biology	5

Third Quarter

CH	105 Fund. Chem. III	4
CH	105L Gen. Chem. Lab	1
U	103 Indiv. in Soc.	3
EH	110 Eng. Comp.	5
	Core Philosophy (p. 16)	5

SOPHOMORE YEAR

CH	207 Organic Chem.	4
CH	207L Org. Chem. Lab	1
PS	205 Int. Phys. I	4
PS	205L Phys. Lab	1
ZY	300 Genetics	5
	Core History (p. 16)	3

CH	208 Organic Chem.	3
CH	208L Org. Chem. Lab	2
PS	206 Intro. Physics II	4
PS	206L Physics Lab	1
ZY	306 Prin. of Ecol.	5
	Core History (p. 16)	3

EH	220 Great Books I	5
PS	207 Intr. Phys. III	3
PS	207L Physics Lab	1
	Core History (p. 16)	3
	General Elective or ROTC	3

JUNIOR YEAR

ZY	303 Evol. & Syst.	5
ZY	402 Nat. Hist. Vert.	5
EH	221 Great Books II	5

COM	100 Prof. Comm.	3
ADS	321 An. Biochem.	5
ZY	401 Inv. Zoology	5
	Computer Science	3

ZY	Elective	5
EH	400 Adv. Comp.	5
MB	300 Gen. Microbiology	5

SENIOR YEAR

GL	110 Phys. Geology	5
ZY	310 Cell Biology	4
BI	102 Plant Biol.	5
	Elective or ROTC	4

ZY	524 An. Physiology	5
ZY	301 Comp. Anat.	5
MH	162 An. Geom. & Calc.	5

GL	111 Hist. Geology	5
ZY	Elective	5
	Gen. Elective or ROTC	10

TOTAL — 202 QUARTER HOURS

* Chemistry may also be started with CH 101. See advisor for details.

In the event the first-year Veterinary College alternative is not followed, the indicated senior year courses must be completed successfully to receive the B.S. degree in zoology.

College of Veterinary Medicine

T. R. BOOSINGER, *Dean*

J. S. JANICKI, *Associate Dean, Research & Graduate Studies;*
Coordinator of Animal Health Research

D. W. ANGARANO, *Acting Associate Dean, Student Affairs*

R. D. WHITLEY, *Acting Associate Dean, Admissions and Standards*

G.E. BEARD, *Assistant Dean, Continuing Education and Alumni Affairs*

THE COLLEGE OF VETERINARY MEDICINE offers a fully accredited program of training leading to the degree of Doctor of Veterinary Medicine. The degree requires four years in the professional curriculum after completion of a pre-professional curriculum which may take more than four years for the average applicant.

Admission

Although the largest percentage of students admitted are residents of Alabama, some spaces are available for non-Alabama students. Most of these are by contract through the Southern Regional Education Board (SREB), but 10 non-Alabama students not under a contract program with Auburn University may be accepted. Individuals in this category must have a minimum overall and required GPA of 3.0 on a 4.0 scale, possess exceptional qualifications, pay non-resident university fees and be citizens of the United States. Alabama and SREB students must have a minimum GPA of 2.5 on a 4.0 system on all course work attempted and on all required courses. A grade of **D** on any required course will not be accepted. Also, the Committee on Admissions and Standards of the College of Veterinary Medicine may require a personal interview, a reading comprehension test or an examination on any required course. The College of Agriculture and the College of Sciences and Mathematics offer Pre-Veterinary curricula and are responsible for pre-veterinary counseling. Although farm experience and work with veterinarians are not absolute requirements for admission, applicants are urged to gain such training. Students without this experience frequently have difficulty with certain courses, particularly in the clinical areas.

Application for admission to the pre-veterinary curriculum should be made directly to the Admissions Office, Auburn University. Application for admission to the College of Veterinary Medicine, except for SREB students, should be made to the Chairman of Admissions, College of Veterinary Medicine, Auburn University, AL 36849. SREB students must apply through their appropriate state agency.

Minimum Requirements for Pre-Veterinary Medicine

1. Completion of the Core Curriculum as stated in the General Information section in this *Bulletin*.
2. Specific Course Requirements: Minimum pre-veterinary requirements for Alabama residents are exactly as listed for the pre-veterinary curriculum. The program in the College of Agriculture has the same courses, but they are distributed over nine quarters. Non-Alabama and SREB applicants must have acceptable equivalents which have been approved by the College of Veterinary Medicine. Individuals taking the pre-veterinary curriculum are expected to declare an academic major prior to their fifth quarter of enrollment.
3. All transfer courses must be equivalent in hours and content. CLEP substitutions are acceptable as stated in this catalog but only for biology, history and humanities. English credit can be earned only as stated in the Core Curriculum. Courses will not be waived on the basis of degrees or "practical experience." Pass-Fail or Satisfactory-Unsatisfactory grades are not acceptable in required courses. Consideration will not be extended to anyone with an overall or required course GPA of less than 2.5 or who is not a bona fide resident at the **time of application**.
4. Time Limitation: All required courses in the advanced physical and biological science categories must have been completed within six calendar years prior to the anticipated date of enrollment in the College of Veterinary Medicine.
5. Standardized examination: Applicants must complete the Graduate Record Examination (verbal and quantitative) within five years immediately preceding the deadline for receipt of applications. Results of the GRE must be officially reported to the Office of Academic Affairs, College of Veterinary Medicine by February of the following year.

Application Procedure

Admission of Alabama residents to the College of Veterinary Medicine must be gained through formal application made between September 15 and November 1 preceding the fall quarter in which admission is desired. The length of residence of Alabama applicants shall be a factor. The final date for accepting applications from non-Alabama students is November 1. SREB applicants should consult their advisors for their exact dates. All applicants must be citizens of the United States.

Application packets, available from the College of Veterinary Medicine or the Kentucky advisors, contain all materials necessary and instructions for making application. A processing fee of \$35.00 is required of all applicants, and an additional \$25.00 is required of all who have not previously attended Auburn University.

Students admitted to the College of Veterinary Medicine must submit one completed physical examination report on a form supplied by Auburn University at least three weeks prior to date of registration (not required of students formerly enrolled at Auburn University) and comply with the requirements of the rabies immunization program of the College. Also required are two supplemental official transcripts of any work completed after application is filed.

The final selection of students is made by the Committee on Admissions and Standards of the College of Veterinary Medicine, Auburn University. These selections are made from the applicants who have been certified by the committees in the respective states after giving due consideration to scholastic record and general adaptability for the profession. The right is reserved to accept or reject any applicant.

Admission under the Regional Plan — Under the Regional Plan for Veterinary Training, the College of Veterinary Medicine currently serves two states: Alabama and Kentucky.

The Land-Grant institution in each state participating under the SREB plan maintains counseling and guidance service for students desiring admission to the College of Veterinary Medicine. Students attending other institutions should contact the Land-Grant School advisor in their state for information concerning admission requirements.

Scholastic Requirements

All applicants and students in the professional program are subject to the academic and disciplinary regulations of the College of Veterinary Medicine in addition to those of Auburn University.

Any student who earns less than a 2.25 GPA for any quarter will be placed on academic probation. A student who fails to earn a 2.25 GPA in each of the succeeding two quarters of enrollment may be dropped from the rolls of the College of Veterinary Medicine for scholastic deficiency. In addition, a student who does not have a veterinary college cumulative average of 2.25 at the end of any academic year may be required to withdraw from the College of Veterinary Medicine.

A student who makes a grade of **F** on any course may be required to withdraw from the College of Veterinary Medicine until such time as the course is offered again. Such a student may be required to repeat certain other courses in the curriculum for that quarter.

Clinical courses are unique in that the art and skills to be developed in them can be acquired only through full participation in the laboratories. Attendance in these courses is required except in case of illness or other extenuating circumstances as may be judged by the involved instructor. Grading in these clinical laboratory courses is primarily by subjective evaluation. When a course involves student rotation through several disciplines or sections, the student must receive a passing grade in each area before a passing grade can be given for the course.

The responsibility for counseling is shared by the faculty of this College and the Career Development Service.

Non-Scholastic Requirements

Health Insurance: Students enrolled in the professional curriculum are required to provide evidence of health insurance coverage that includes rabies post exposure treatment. Information about student insurance is available in the College of Veterinary Medicine, Office of Academic Affairs.

Microscopes: To be admitted to the College of Veterinary Medicine, a student must own a compound microscope acceptable to the faculty. The student must furnish a microscope in all courses requiring the use of this instrument.

Required Withdrawal

The faculty of the College of Veterinary Medicine reserves the right to require the withdrawal at any time of any student who in the judgment of the admissions and standards committee is not profiting from the instruction offered, who is neglectful, irregular, dishonest or indifferent in the performance of required duties and studies or whose character or conduct is inconsistent with good order of the veterinary college or with the standard of the veterinary profession.

Requirements for Graduation

To be eligible for the D.V.M. degree, candidates must complete all of the required courses in the order listed in the curriculum in veterinary medicine with a minimum overall GPA of 2.25. Following completion of all academic work, each student is required to serve a preceptorship of one quarter with an approved practicing veterinarian. A certificate of satisfactory completion of a preceptorship is required for graduation.

A graduation fee of \$15.00 must be paid at the beginning of the quarter of graduation and all indebtedness due the institution must be paid prior to graduation.

Curriculum in Veterinary Medicine (VM)

FIRST YEAR		
First Quarter	Second Quarter	Third Quarter
VM 320 Anatomy I 5	VM 321 Anatomy II 5	VM 322 Anatomy III 5
VM 326 Micro. Anat. I 3	VM 327 Micro. Anat. II 4	VM 328 Micro. Anat. III 4
VM 313 Physiology I 5	VM 314 Physiology II 5	VM 315 Physiology III 5
VM 300 Orientation 2	VM 411 Microbiology II 5	VM 412 Microbiology III 5
VM 331 Microbiology I 4		
SECOND YEAR		
VM 405 Pathology I 5	VM 406 Pathology II 5	VM 423 Clinical Pathology 5
VM 413 Microbiology IV 4	VM 410 Parasitology II 4	VM 407 Pathology III 4
VM 409 Parasitology I 4	VM 401 Pharmacology II 3	VM 427 S.A. Med. & Surg. I 4
VM 319 Pharmacology I 5	VM 432 Microbiology V 3	VM 402 Pharmacology III 2
VM 428 L.A. Phy. Diagnosis 2	VM 316 Physiology IV 5	VM 429 S.A. Phys. Diag. 1
		VM 421 Intr. to Surg. 3
		VM 415 Integrated Pathobiology .. 1
THIRD YEAR *		
VM 414 L.A. Med. I 5	VM 433 Avian Diseases 4	VM 440 S.A. Clinics I 7
VM 424 S.A. Med. & Surg. II 3	VM 425 S.A. Med. & Surg. III 5	VM 444 L.A. Clinics I 7
VM 408 Lab. An. Med. 3	VM 420 L.A. Med. II 5	VM 435 Theriogenology 5
VM 431 Vet. Radiology 4	VM 422 L.A. Surgery 3	
VM 448 S.A. Surg. Pract. I 2	VM 449 S.A. Surg. Pract. II 2	
VM 403 Vet. Toxicology 3	VM 426 Clin. Path. Lab. 1	
FOURTH YEAR *		
VM 437 Vet. Toxicology 3	VM 442 S.A. Clinics III 7	VM 443 S.A. Clinics IV 5
VM 441 S.A. Clinics II 7	VM 446 L.A. Clinics III 7	VM 447 L.A. Clinics IV 5
VM 445 L.A. Clinics II 7	VM 439 L.A. Med. IV 5	VM 430 Jurisp. & Ethics 2
VM 438 L.A. Med. III 2		VM 455 Ethology 1
		VM 453 Practice Mgmt. 2
		VM 463 Adv. Vet. Appl. 4
SPRING QUARTER		
VM 454 Preceptorship 0		
TOTAL — 233 QUARTER HOURS		

*Beginning with the third quarter of the third year, clinical participation will be continuous, divided into five periods called quinarys. Fee payments and grade reporting will follow the university quarterly schedule.

Graduate Programs

Master of Science degrees are offered in each department in the College of Veterinary Medicine. The Doctor of Philosophy degree in Biomedical Science is offered in a college-wide program.

The Graduate School

JOHN F. PRITCHETT, *Associate Vice President for Academic Affairs and Dean*

MICHAEL LISANO, *Associate Dean*

REBECCA H. RODEN, *Assistant Dean*

Graduate student enrollment at Auburn University has increased for the past ten years, and now exceeds three thousand. Continued growth is expected with the University's mounting reputation as a graduate institution and increases in contract and grant funding. In addition, the Graduate Faculty includes a thousand outstanding members who hold degrees from more than 140 universities from around the nation and the world.

Auburn University has a proud history of 141 years and graduate education has been an integral part for 127 of those years, the first Master of Arts being awarded to Howard M. Hammill in 1870. Since then, 24,112 other graduate degrees have been awarded (through August 1996), including 3,287 doctorates.

There was no Auburn University when Mr. Hammill received that first M.A. The institution then was East Alabama Male College.

The area which includes Auburn was first opened to settlement in 1836 by removal of the Creek Indians, and the City of Auburn was founded the same year by Judge J. J. Harper and others from Harris County, Georgia. Judge Harper's daughter-in-law, Elizabeth Taylor Harper, suggested the name. She was moved by Oliver Goldsmith's poem, "The Deserted Village," which sings, "Sweet Auburn, loveliest village of the plain."

The college which would become Auburn University was chartered in 1856 as the Methodist-supported East Alabama Male College. A single four-story building was completed in 1859, and eighty students enrolled. Five men were graduated in the spring. When Alabama seceded from the Union, all the students resigned to enlist. The college building, Old Main, was used as a Confederate hospital from 1864 until classes resumed in 1866. Old Main burned in 1887 and was replaced on the same site by Samford Hall in 1888. Samford Hall still stands, serving as the university's administrative headquarters and housing the offices of the university president and the provost. Hargis Hall, home of the Graduate School offices, is a year older and has served students for 110 years.

The college struggled in the shattered Southern economy during the years after the Civil War and the Methodist Church granted it to the state in 1872 for use as a land-grant university under the Morrill Act, signed by President Lincoln in 1862. The institution thus became the Agricultural and Mechanical College of Alabama, changing from a private liberal arts school to a state-supported college with an emphasis on new scientific and agricultural programs. Continuous expansion followed and, in 1899, the Legislature decided a new name was needed to reflect the widened role of the institution. It became the Alabama Polytechnic Institute.

From the first, however, virtually everyone connected with the university largely ignored official names, preferring always the name Mrs. Harper had selected for the city. As Charles C. Thach, the university's sixth president, said, "The Alabama Polytechnic Institute, a high sounding phrase, is fit for legal documents and grave legislation, but not to conjure with and not to yell and not to dream with as is 'Fair Auburn.'" The Legislature agreed in 1960, and Alabama Polytechnic Institute became Auburn University.

An important milestone in development of graduate education was the appointment in 1921 of Dr. George Petrie as the first dean of the Graduate School. Until then, graduate work was administered by the president and the registrar. Dr. Petrie, head professor of the Department of History, served as dean until his retirement in 1942.

On January 15, 1995, Dr. John F. Pritchett was appointed Interim Associate Vice President for Academic Affairs and Dean of the Graduate School and assumed that permanent position effective October 1, 1996. Other deans have included Dr. Russell Spurgeon Poor, 1944-1948; Dr. Fred Allison, 1948-1953; Dr. W. V. Parker, 1953-1972; Dr. Paul F. Parks, 1972-1985; Dr. Warren W. Brandt, acting dean 1985-1986; and Dr. Norman J. Doorenbos, 1986-1994.

In 1952, the Board of Trustees authorized programs leading to the degrees of Doctor of Philosophy and Doctor of Education. The first doctoral degree was awarded in Zoology-Entomology in June 1955.

Frequently Contacted Campus Offices

The Graduate School is open 7:45-11:45 a.m. and 12:45-4:45 p.m., Monday through Friday
Dean John Pritchett (334) 844-2125

Associate Dean Michael E. Lisano (334) 844-2135
 Assistant Dean Rebecca H. Roden (334) 844-2131
 Assistantships: Call the head or chair of the department in which the student wishes to enroll.

The Graduate Student Organization

The Graduate Student Organization (GSO) is open to all graduate students at Auburn University and promotes graduate education, research and student welfare. The organization works with the Graduate School and other administrative branches of the University to improve the conditions under which graduate students live and work. The GSO is a member of the National Association of Graduate and Professional Students.

The organization publishes *The Graduate Student Guide*, an introductory booklet on how to make the most of the graduate experience at Auburn. The *GSO Times*, a newsletter including the latest announcements and other GSO news, is available quarterly.

The GSO represents graduate students from 125 academic programs in 65 departments on campus, and is guided by graduate student senators from these programs. They are under the direction of an Executive Committee of four officers and the chairs of six standing committees. Appointments to many university committees are made through the GSO leadership.

The GSO promotes social and academic interaction between graduate students, Auburn University faculty, administration and the community. Orientation picnics, seasonal socials, research forums, workshops on career placement and opportunities, the *GSO Times* and the perks programs are just a few of the services and activities GSO provides for graduate students.

Information for Students Holding Graduate Assistantships

Each graduate assistant must be registered for at least one hour during each quarter of appointment as an assistant. Benefits granted faculty and staff are not available to assistants, but they receive the same benefits as other University students. In addition, graduate assistants receiving support from a one-fourth time or greater appointment are charged the lower state resident tuition and other fees even if they are from another state.

Graduate assistant appointments are temporary, and continuance depends upon availability of funds, level of enrollment and research needs. All graduate students employed in instruction complete faculty service reports for each quarter.

Salaries are paid in accordance with the budget policies and payroll procedures of the University. The Board of Trustees is obligated to pay certain fixed charges against the institution and thereafter to pay salaries in full insofar as funds are available. If for any reason beyond the control of the Board of Trustees funds are not available, then salaries will be prorated.

Work loads for graduate assistants are defined on the basis of a normal teaching load or the equivalent time in other duties as determined by each department head and the dean of the school or college in which the assistant is employed. For example, a one-third work load is one-third of a normal teaching load. The graduate assistant working on a full-time basis may carry an academic load of not more than five hours. An assistant working two-thirds time may carry not more than a 10-hour academic load. An assistant with a one-third work load may carry up to 17 hours.

If an assistant voluntarily resigns during an appointment period, or does not accept extension or reappointment, a letter of resignation to the student's department is required from the student.

Oak Ridge Associated Universities

Auburn University has been a sponsoring institution of the Oak Ridge Associated Universities (ORAU) since 1946. ORAU is a private, not-for-profit consortium of 82 colleges and universities and a management and operating contractor for the U.S. Department of Energy (DOE) with principal offices located in Oak Ridge, Tennessee. Founded in 1946, ORAU provides and develops capabilities critical to the nation's technology infrastructure, particularly in energy, education, health and the environment. ORAU works with and for its member institutions to help faculty and students gain access to federal research facilities; to keep members informed about opportunities for fellowship, scholarship and research appointments; and to organize research alliances among our members in areas where their collective strengths can be focused on issues of national importance.

ORAU manages the Oak Ridge Institute for Science and Education (ORISE) for DOE. ORISE is responsible for national and international programs in science and engineering education, training and management systems, energy and environment systems and medi-

cal sciences. ORISE's competitive programs bring students at all levels, K-12 through post-graduate, and university faculty members into federal and private laboratories.

Other ORAU activities include the sponsorship of conferences and workshops, the Visiting Scholars program and the Junior Faculty Enhancement Awards.

Contact Dr. Bryan A. Chin, (334) 844-4784, for more information about ORAU programs.

General Regulations

Regulations governing the Graduate School equal or exceed the standards of the Conference of Southern Graduate Schools and the Commission on Colleges and Universities of the Southern Association of Colleges and Schools. Regulations listed here represent the minimums of the Graduate School. However, individual departments may impose more stringent requirements and students will be governed by them.

Admission Requirements

A bachelor's degree or its equivalent from an accredited college or university is required. The Graduate School does not require a master's degree for admission to a doctoral program, although it is required by some departments.

The undergraduate preparation must satisfy a screening committee of the school or department involved. If more than ten quarter hours of additional undergraduate work are required, the applicant may be asked to register in an appropriate undergraduate program as an unclassified student.

All applicants except those in Management, M.B.A., or M.Ac. programs, must submit satisfactory scores on the Graduate Record Examinations (GRE) General Test. Management, M.B.A. and M.Ac. applicants must submit satisfactory scores on the Graduate Management Admission Test (GMAT).

In addition to the GRE General Test, some departments and programs require satisfactory scores on the GRE Subject Test. Applicants should consult the list on the back of the official Graduate School application. All international applicants also must score at least 550 on the Test of English as a Foreign Language (TOEFL).

Applicants for graduate assistantships or fellowships are urged to take the GRE or GMAT in the fall. Applications and dates for all these tests may be obtained at many colleges and universities, or by writing Graduate Record Examinations, Educational Testing Service, CN6000, Princeton, NJ 08541-6000.

Application Procedures

Applications for admission may be obtained from the Graduate School offices or by writing to the Dean of the Graduate School, 106 Hargis Hall, Auburn University, AL 36849-5122.

Admission is permitted on approval of the formal application. The approval is valid for a maximum of twelve months beyond the entrance date given on the application. If the student does not register during this period, a new request for approval must be submitted.

Applications and all relevant material must be received by the Graduate School at least three weeks before the first day of classes of the quarter in which the student wishes to begin graduate studies. Deadlines are listed in the Graduate School calendar in the front of this *Bulletin*.

Applications from domestic students must be accompanied by a \$25 fee, those from international students by a \$50 fee. In addition, two official transcripts of all undergraduate and any graduate credits must be mailed directly to the Graduate School from EACH school previously attended. Graduates of Auburn University follow the same procedure as other applicants except they do not have to provide a transcript of credits earned at Auburn.

Students whose applications are approved will receive a medical record form with their admission letters. These forms should be returned to the Drake Student Health Center.

Application materials become the property of Auburn University and may not be returned to the applicant or forwarded to other institutions.

The Dean of the Graduate School is the only person authorized to admit students, refuse admission, or waive any requirement.

Admission of Transient Graduate Students

A graduate student in good standing in an accredited college or university may be admitted as a transient when faculty and facilities are available. To be eligible, the student must submit the special Graduate Transient Form prior to the beginning of the quarter for which transient

status is requested. The form, available from the Graduate School, must bear the signature of the student's graduate dean or his/her designee.

Transient status is granted for one quarter only and does not constitute admission or matriculation as a degree candidate. Students desiring to enroll for more than a single quarter in a non-degree status should make application to the appropriate GS 8, 11 or departmental 13 classification.

Student Classifications

For administrative purposes, Auburn University students are assigned numbered classifications. Those which apply to graduate students are:

- 06** - Students who hold full admission to Graduate School for work toward a master's degree.
- 07** - Students who hold full admission to the Specialist in Education program.
- 08** - Students who meet requirements for admission except that they have not taken the GRE or GMAT. This classification is for one quarter only, and satisfactory scores must be submitted by the end of that quarter. This classification cannot be used by international students, who must submit satisfactory scores on all required examinations before they are admitted.
- 08GS** - One quarter non-degree special admission to Graduate School pending receipt of satisfactory GRE or GMAT scores.
- 09** - Students who hold full admission to doctoral programs.
- 11GS** - Special admission to Graduate School for non-degree purposes for students who meet all admissions requirements to Graduate School.
- 13** - Students who hold master's degrees from accredited institutions and who seek professional improvement leading to AA certification or other non-degree objectives.

Non-Graduate Students and Graduate Work

An Auburn University student who will receive a bachelor's degree from this institution may register for graduate courses provided that the following conditions are met: the student has at least a 3.0 GPA, is within 40 quarter hours of graduating, has the written consent of the instructor of each graduate course, and obtains approval in advance from the Graduate School.

A maximum of 10 quarter hours of graduate course work taken in this option later may be applied toward an advanced degree at Auburn University provided that appropriate arrangements are made in advance with the Graduate School, a grade of B or higher is achieved on all courses used for graduate credit, and the total course load taken at the time the student is in a graduate course does not exceed 17 quarter hours.

The same guidelines apply to undergraduate students taking graduate courses for undergraduate credit. A student may not use the same graduate course for both undergraduate and graduate credit.

Any Classification 10 student—that is a post-baccalaureate, non-degree student—desiring enrollment in a graduate course must receive written consent of the instructor and approval of the Graduate Dean in order to register for such a class.

Undergraduate Courses for Graduate Students

A graduate student may register for undergraduate courses under the satisfactory-unsatisfactory grading option if the major professor so recommends. No 500-level course may be taken under this option. The student must complete the S-U option form available at the Graduate School by the third class day of the quarter.

Transfer of Credit from Other Institutions

Graduate credit taken in residence at another approved graduate school may be transferred to Auburn University, but will not be accepted until the student has completed fifteen hours of work in the Graduate School at Auburn University. No prior commitment is made concerning whether transfer credit will be accepted. A student must earn at least 35 quarter hours, or half of the total hours required for a master's degree, whichever is greater, at Auburn University. A program that requires only 45 hours of credit will be limited to 10 quarter hours of transfer credit. No such limitation is applied to doctoral degrees. The credit must be acceptable to the student's advisory committee and be pertinent to the student's plan of study. No transfer credit will be approved without two official transcripts. No course on which a grade lower than B was earned may be transferred. Additionally, credit will not be allowed if the combined GPA on graduate work taken at other schools is less than 3.0 on a 4.0 scale, nor may transfer credit be used to improve the GPA on courses taken at Auburn University.

All transferred credit to be counted toward a master's or specialist degree must have been earned within five years of the date the degree is awarded. There is no such time limit on credit for doctoral degrees.

Two-Campus Studies

A student seeking a graduate degree at Auburn University, Auburn University at Montgomery, the University of Alabama, the University of Alabama at Birmingham, or the University of Alabama at Huntsville may take up to half the course work at another of these institutions. The courses taken must be approved in advance by the student's Advisory Committee and the respective graduate deans. All credit must be earned at the two institutions in which the student is working, and none may be transferred from another institution.

Registration and Graduation Requirements

Every student expecting credit toward a graduate degree must be registered with the Graduate School, and no student is considered a candidate for a degree unless properly registered. The student also must be registered in the quarter of graduation and in any other quarter during which the staff or the facilities of the university are used for work on a thesis or dissertation, for the taking of oral examinations, or for removal of an "incomplete" grade. **Registration for GS 000 (Clearing) suffices for removal of "incomplete" grades and for graduation, but not for other purposes, such as work on a thesis or dissertation, or obtaining final approval of a thesis or dissertation.**

Currently enrolled graduate students must register for the next quarter during the period designated for registration, which occurs about the middle of each quarter and is listed in the Graduate School calendar in the front of this *Bulletin*. Failure to do so will result in the student's being charged a late registration fee of \$50. New graduate students and students returning after a period of not being enrolled may register during the registration period for the new quarter or during the late registration period as listed in the calendar.

Students should indicate expected graduation when registering for their final quarter. If a student fails to do that, however, the student must notify the Graduate School by the fifth class day of the quarter that graduation is expected.

NO STUDENT will be permitted to graduate who fails to submit a plan of study to the Graduate School prior to the quarter of expected graduation. Graduation day is the official last day of each quarter and, therefore, is the deadline for submitting plans of study for graduation the following quarter.

It is the responsibility of graduate students to check records for compliance with graduation requirements. This is done by requesting a graduation check at the Graduate School no later than the last day of the quarter preceding the one in which the student expects to graduate.

A graduate student may carry a maximum course load of 17 hours per quarter. This includes undergraduate courses, but does not include 699 (Research and Thesis) and 799 (Research and Dissertation) when required of all graduate students in a department each quarter. **Graduate students must carry ten hours per quarter to be classified as full-time students.**

Graduate degrees are awarded at the end of each quarter. Candidates wishing to graduate *in absentia* must inform the Registrar's Office.

Calendar

The university operates on the quarter system. The Graduate School calendar provided in the front of this *Bulletin* and also available at the Graduate School, contains the dates of various deadlines of importance. It should be followed carefully.

Advisors

The dean of the Graduate School is the general counselor to all graduate students. A faculty advisor or major professor will be designated for each student by the head of the major department. There also will be an advisory committee for each student. Some required forms and reports regarding the student's program must be approved by the major professor, advisory committee, department head and the dean of the Graduate School. Students should ascertain which signatures must be obtained.

Due Process

Each graduate student's progress toward a degree will be monitored by the student's advisory committee. If a graduate student is deemed not to be making satisfactory progress toward the degree, the student may be dropped from the Graduate School. Issues of professional and personal development may be considered in determining satisfactory progress toward the degree. A statement of the procedure to be followed in the implementation of this policy is available in the Graduate School office.

Withdrawing from Courses

Courses may be dropped without academic penalty on or before mid-quarter. If a course is dropped after mid-quarter, the student will receive a grade of WF (withdrew failing). Exceptions will be rare.

A student dropping the only course for which the student is registered must resign for the quarter on a separate form obtained from the Graduate School.

Auditing Courses

A graduate student may audit courses. No grade is awarded, but the student must register for all courses audited.

Transfer to a Different Department

For a student to transfer from one department to another requires a new application for admission and the usual application fee.

Grades

A GPA of 3.0 on a 4.0 scale must be earned on all courses carrying graduate credit. No more than 15 hours beyond the student's plan of study is allowed in obtaining the GPA. No grade below C is acceptable for credit toward a graduate degree, and each course on which a grade below C is received must be repeated whether or not it is listed on the student's plan of study.

Honor Points

The Graduate School uses an honor point system in ascertaining the eligibility of students to continue in graduate studies. **Grades on all courses, including undergraduate courses, will be used in determining the overall average for continuation in Graduate School.** Each grade of **A** earns one honor point per hour of course credit. Thus, a grade of **A** on a course offering five hours of credit earns the student five honor points. A grade of **B** does not earn honor points. A grade of **C** costs the student an honor point per hour, a grade of **D** costs two honor points per hour, and a grade of **F** costs three honor points per hour. A deficiency of sixteen or more honor points in the student's overall academic record, including undergraduate courses, will result in dismissal. The student may return only after undertaking remedial work as an unclassified undergraduate, and when the department involved is willing to certify to the dean of the Graduate School that the student merits readmission.

Incompletes

A grade of "incomplete" must be removed within the following two quarters or it will be recorded permanently as an **F** and the course will have to be repeated. This applies regardless of the student's enrollment status. A student not enrolled during one of the two following quarters, such as the summer quarter, is not exempt from this rule. Pending removal or recording as an **F**, an "incomplete" is counted as a **C** in determining eligibility for continuing in Graduate School. No student may graduate until "incomplete" grades are removed, and the removal must be completed at least three weeks before the date of graduation, regardless of whether the course is included on the Plan of Study.

Graduate Study and University Employees

An Auburn University faculty member or employee may pursue a graduate degree outside the school or college of employment with the approval of the head of the employing department and the dean of the employing school or college. Inquiries should be made to the dean of the Graduate School.

Correspondence Work Unacceptable

Study by correspondence shall not be counted toward a graduate degree.

Research Involving Humans

Auburn University established the Institutional Review Board for the Use of Human Subjects in Research (IRB) to evaluate research for compliance with the guidelines and policies of the U.S. Department of Health and Human Services (DHHS), the Public Health Service (PHS), the Food and Drug Administration (FDA) and other federal, state and local regulations. All research in which human subjects are used, whether by faculty, staff or students, must be approved in advance by the IRB, regardless of the source of funding, lack of funding or any other consideration. Research involving human subjects not approved in advance may be disallowed and may incur severe penalties for non-compliance with institutional policy. Information and review forms may be obtained from the Administrator for Special Programs, 307D Samford Hall, (334) 844-5966.

Activities Involving Animals

Auburn University's Animal Resources Program requires compliance with the Animal Welfare Assurance negotiated with the Office of Protection from Research Risks/National Institutes of Health (OPRR/NIH). A major part of that Assurance involves the Institutional Animal Care and Use Committee (IACUC) which ensures compliance with the Assurance, the policies of the U.S. Department of Health and Human Services (HHS), the U.S. Department of Agriculture (USDA) and all other federal, state and local regulations concerning care, treatment and use of animals. All activities, whether teaching, research, production or display of animals, and whether the activity is funded or not, must be approved in advance by the committee. The use of animals for any purpose that is not approved in advance by the IACUC may involve severe penalties for non-compliance with institutional policy and could jeopardize the University's Animal Welfare Assurance filed with the OPRR and the NIH. Information may be obtained from the Director of Animal Resources, (334) 844-5667.

THE MASTER'S DEGREE PROGRAM

The minimum requirements for most master's degrees can be satisfied in one academic year of three quarters or nine months. In practice, however, many students need four quarters or longer. Certain departments have special requirements as outlined in this *Bulletin*. In addition, those who hold assistantships or fellowships, those who engage in time-consuming work off-campus, or those with scholastic deficiencies of any sort cannot meet all requirements in the minimum time. Also, research is unpredictable and frequently requires more time than anticipated.

Certain departments offer a master's degree under two plans, referred to as the Thesis Option and the Non-Thesis Option.

The Master of Science

The Master of Science is offered in Accountancy, Aerospace Engineering, Agricultural Economics, Agricultural Engineering, Agronomy and Soils, Anatomy and Histology, Animal and Dairy Sciences, Botany, Business, Chemical Engineering, Chemistry, Civil Engineering, Communication Disorders, Computer Science and Engineering, Consumer Affairs, Economics, Education, Electrical Engineering, Entomology, Finance, Fisheries and Allied Aquacultures, Forestry, Geology, Horticulture, Human Development and Family Studies, Industrial and Systems Engineering, Large Animal Surgery and Medicine, Management, Marketing and Transportation, Materials Engineering, Mathematics, Mechanical Engineering, Microbiology, Nuclear Science, Nutrition and Food Science, Ornamental Horticulture, Pathobiology, Pharmacal Sciences, Pharmacy Care Systems, Physics, Physiology and Pharmacology, Plant Pathology, Poultry Science, Psychology, Radiology, Small Animal Surgery and Medicine, Sociology, Statistics, Textile Science, Toxicology, Wildlife Science and Zoology.

The Master of Arts

The Master of Arts is offered in Communication, English, French, History, Political Science, Sociology and Spanish.

Special or Professional Master's Degrees

These special or professional degrees also are offered: Master of Accountancy, Master of Aerospace Engineering, Master of Agriculture, Master of Applied Mathematics, Master of Aquaculture, Master of Arts in College Teaching, Master of Building Construction, Master of Business Administration, Master of Chemical Engineering, Master of Civil Engineering, Master of Communication, Master of Communication Disorders, Master of Community Planning, Master of Computer Science and Engineering, Master of Education, Master of Electrical Engineering, Master of Fine Arts, Master of Forestry, Master of French Studies, Master of Hispanic Studies, Master of Industrial Design, Master of Industrial and Systems Engineering, Master of Management Information Systems, Master of Materials Engineering, Master of Mechanical Engineering, Master of Music, Master of Probability and Statistics, Master of Public Administration and Master of Zoological Studies.

Master of Arts in College Teaching

This is a non-thesis master's degree program oriented toward the preparation of classroom teachers for undergraduate instruction with special emphasis on positions in community colleges. Participating departments are Chemistry, Communication, Consumer Affairs, English, Nutrition and Food Science, Political Science, Sociology and Zoology.

The program requires a minimum of 48 credit hours. EDL 665 and GS 600 are required courses. In addition, the student must complete a minimum of 40 hours in major and minor fields. Departments may require further course work of students with academic deficiencies.

Students are required to obtain the equivalent of one quarter of full-time supervised teaching experience in the area of the academic major. This internship usually is in a community college and usually is arranged after the student has completed at least two-thirds of the course work. The Coordinator of Graduate Programs arranges placement and supervision of students in their internships and approves all arrangements. Upon completion of the internship, Form 10 indicating successful completion and signed by the chair of the student's advisory committee and the Coordinator must be filed with the Graduate School prior to graduation.

A final examination, either written, oral or both, based on the student's plan of study, will be conducted by members of the student's committee.

Advisory Committee

The student will work under the direction of an advisory committee composed of three or more members recommended by the appropriate department head. The chair must be a member of the Graduate Faculty. This committee will approve the student's program of study and conduct the required examinations.

Courses for Graduate Students

At least one-half of all credit hours toward the minimum degree requirement must be earned in 600- and 700-level courses, which are courses for graduate students only. The remainder may be in 500-level courses.

Plan of Study

Early in the graduate program, each student should confer with the appropriate departmental advisor or major professor to select courses and discuss research interests. Then a plan of study should be prepared and submitted to the Graduate School. Form 3, available at the Graduate School, is provided for this. For full-time students, the plan of study must be submitted no later than the end of the second quarter in Graduate School. For part-time students, the plan of study must be submitted before registration for the fourth course taken in Graduate School. Notification of all changes must be provided before the beginning of the final quarter. One to three changes may be made by using the simplified "Change in Existing Plan of Study Form" available at the Graduate School. Four or more changes require a new Plan of Study.

The student is responsible for carrying out the planned program and for asking the major professor to make necessary changes.

NO STUDENT will be permitted to graduate who fails to submit a plan of study to the Graduate School prior to the quarter of expected graduation. Graduation day is the official last day of each quarter and, therefore, is the deadline for submitting plans of study for graduation the following quarter.

Language Requirement

Some departments require a reading knowledge of one foreign language. These requirements are outlined in the departmental statements later in this section.

Arrangements to take the foreign language examination should be made with the student's major professor and the head of the department. The student must apply at the Graduate School by the deadline for each quarter listed in the calendar.

Residency Requirement

A master's degree student under the thesis option must spend one quarter, or an eight-week term, on campus as a full-time student. **This requirement concerns academic residency only; it has nothing to do with residency for fee purposes.**

There is no residency requirement for master's degree students under the non-thesis option.

Time Limit

All graduate work toward a master's degree must be completed within a period of five calendar years.

MASTER'S DEGREE OPTIONS

The following general regulations are minimum requirements. The professor or committee in charge of a student's work may require more than the specified minimum in order to achieve a well-rounded program.

The Thesis Option

The Master of Arts, Master of Science and Master of Industrial Design are offered under the thesis option.

Majors and Minors Subjects: A student under the thesis option must earn a minimum of 45 quarter hours, of which at least 30 quarter hours must be in a major area of concentration. Depending on departmental requirements or the wishes of the student's advisory committee, the remainder of the course work may be taken within the major field or in a separate but closely related area. Specific requirements are set forth in this *Bulletin*.

If a student has not met all undergraduate prerequisites in any field chosen for major or minor work, these should be scheduled as soon as possible, preferably before graduate work begins. The major professor will indicate these on the student's plan of study.

The Thesis: The topic selected for the thesis must be approved by the student's major professor and advisory committee. The student conducts the research and prepares the thesis under the direction of the major professor.

The course entitled "Research and Thesis" is number 699 in all departments. The student must register for a minimum of six credit hours of this course but may register for as many hours as desired. No more than seven hours may be counted toward the degree. The student may register for one or more hours at a time. No grade is assigned for this course.

The *Guide To Preparation and Submission of Theses and Dissertations*, which contains information about requirements for the thesis, is available in the University Bookstore. The Graduate School accepts only theses prepared according to the Guide. The Graduate School Calendar in the front of this *Bulletin* lists the deadline for acceptance of final copies of theses by the Graduate School each quarter. "Final copies" means that the thesis is perfected and ready for binding. A format check may be obtained at the Thesis and Dissertation Office in the Graduate School. If final copies are found to need corrections, the student's graduation may be delayed at least one quarter.

Examinations: All candidates under the thesis option must pass a comprehensive examination covering the major and minor, as well as the research and thesis. This usually is a two-hour oral examination, but the student's advisory committee also may require a written examination. Members of the Graduate Faculty not on the advisory committee may attend any oral examination as visitors. The major professor will schedule the oral examination not later than the deadline indicated in the Graduate School Calendar. Successful completion requires the unanimous support of all members of the advisory committee. If a student fails the examination, one re-examination may be given on recommendation of the advisory committee and approval by the dean of the Graduate School. Further examinations will be allowed only under exceptional circumstances and with the approval of the Graduate Council.

The Non-Thesis Option

Information on special or professional master's degrees not requiring a thesis may be found in this *Bulletin*. Students in these programs must pass a comprehensive examination just as do students under the thesis option. The examination covers the major and minor and any research and special project involved.

Summary of Procedures for Master's Degree Program

The student should:

1. Obtain application forms from the Graduate School and apply for admission by submitting completed forms and other required materials as outlined in this *Bulletin*.
2. Apply for an assistantship, if pertinent, with the department involved.
3. Become familiar with requirements for the desired degree as outlined in this *Bulletin*.
4. Consult with departmental advisor and become oriented to departmental procedures.
5. Obtain electronic permit for registration from the Graduate School and plan schedule of study for the first quarter with advisor.
6. Establish an advisory committee through the department head and departmental advisor; usually done during the first quarter of course work.
7. Obtain Form 3 from the Graduate School and prepare a proposed plan of study in consultation with the advisory committee. Submit a plan approved by the committee and department head to the Graduate School no later than the second quarter.
8. Consult with the advisor on approval for the thesis plan, if pertinent, and become familiar with the *Guide To the Preparation and Submission of Theses and Dissertations*, available in the University Bookstore.
9. Fulfill language requirements, if any.
10. Request graduation check in the Graduate School no later than the last day of the quarter (graduation day) prior to the quarter of graduation.
11. Indicate expected graduation during registration for final quarter or notify the Graduate School no later than the fifth class day of the quarter.
12. Prepare thesis manuscript.
13. Arrange for final oral examination with advisory committee.

Second Master's Degree

For a second master's degree, the student fulfills all major requirements applicable to any other master's degree, including the thesis, if appropriate. The student may, on recommendation of the advisory committee, transfer a maximum of ten quarter hours from the previous master's degree.

THE SPECIALIST IN EDUCATION DEGREE

This degree is designed for professional educators who want increased competence in a field of specialization. It consists of two basic components: the major field and supporting course work. The major is divided into a common core and an area of specialization. The latter consists of education courses appropriate to the student's interests and objectives. Areas of specialization are offered in the various departments in the College of Education.

Admission

Scholarship, interpersonal orientation and potential for leadership are considered in the screening procedure. Appropriate experience in teaching or a leadership position in education is requisite. All work beyond the baccalaureate must have been of high quality with an average of at least 3.0 on a 4.0 scale. Students holding a master's degree from Auburn University are not required to submit GRE scores.

Advisory Committee

The student works under the direction of an advisory committee composed of three members recommended by the appropriate department head. This committee will approve the student's program of study, conduct required examinations and direct the required field project. Students in a teaching field work under a committee composed of two members from the College of Education and one member from the appropriate academic department.

Requirements for Degree

A minimum of 48 quarter hours beyond the master's degree must be taken in a program approved by the student's advisory committee. The plan of study should be submitted to the Graduate School no later than the second quarter of study. The composite program of master's and specialist course work must include core courses in four areas: General Curriculum; Educational Psychology or Learning Theory; Social Philosophical or Historical Foundations of Education; and Educational Research. The classroom teacher must have 40 quarter hours in appropriate subject matter, but this may include courses completed for the master's degree. A relevant field project, approved in advance by the student's committee, must be completed under the supervision of the major professor. A final written report on the field project will be submitted to the advisory committee by the student. The advisory committee will conduct a final examination on the area of specialization and the field project. The student has five calendar years to complete the degree.

No student will be permitted to graduate who fails to submit a plan of study to the Graduate School prior to the quarter of expected graduation. Graduation day is the official last day of each quarter and, therefore, is the deadline for submitting plans of study for graduation the following quarter.

DOCTORAL DEGREES

The Doctor of Philosophy is offered in Aerospace Engineering, Agricultural Engineering, Agronomy and Soils, Animal and Dairy Sciences, Botany and Microbiology, Chemical Engineering, Chemistry, Civil Engineering, Computer Science and Engineering, Counseling Psychology, Counselor Education, Curriculum and Teaching, Electrical Engineering, English, Entomology, Fisheries and Allied Aquacultures, Forestry, Health and Human Performance, History, Horticulture, Human Development and Family Studies, Industrial and Systems Engineering, Management, Materials Engineering, Mathematics, Mechanical Engineering, Nutrition and Food Science, Physics, Plant Pathology, Poultry Science, Psychology, Public Administration and Public Policy, Rehabilitation and Special Education, Wildlife Science and Zoology, plus interdepartmental programs in Biomedical Sciences, Economics and Pharmaceutical Sciences.

The Doctor of Education is offered in the following departments: Counseling and Counseling Psychology; Educational Foundations, Leadership and Technology; Health and Human Performance; and Vocational and Adult Education.

General Requirements

Admission

Prospective candidates for the degrees of Doctor of Philosophy and Doctor of Education are admitted under the same procedures and requirements outlined in the General Regulations elsewhere in this *Bulletin*. A student must be admitted to a specific doctoral program, but admission does not mean admission to candidacy for the degree, which occurs only after satisfactory completion of the general oral examination.

Advisory Committee and Plan of Study

After the student has enrolled in the doctoral program, an advisory committee should be selected by the student, major professor and department head. The advisory committee is responsible for developing the student's plan of study and conducting the doctoral general and final examinations. It should consist of at least three members of the faculty. At least two, including the major professor, must be members of the Graduate Faculty. The formal appointment of the advisory committee occurs when the plan of study, filed on Form XV or Form XV-A, is approved by the Graduate School.

The plan of study should be prepared by the student and the advisory committee and filed with the Graduate School as soon as feasible. It should not be delayed beyond the fourth quarter of doctoral work. The Graduate School recognizes that changes may be warranted, and a form is available for amendments as required by student needs, research interests and course availability.

Residency Requirement

A significant part of the Doctor of Philosophy or Doctor of Education program is the residency year. This can be satisfied by the student's completing a minimum of 30 hours of on-

campus course work during three consecutive quarters following classification as a doctoral student (09 designation). During this residency year, the doctoral student shall enroll for a minimum of 10 hours each quarter, a minimum of five hours of which shall be in graded (eg. A, B, C) course work. The residency requirement may not be satisfied by residence during summer quarters only. Interruption of a student's program for the summer quarter does not constitute a break in continuity. The Dean of the Graduate School is authorized to approve alternative residency options in exceptional cases and on an individual basis.

The proposed schedule for accumulation of residency must be submitted to the Graduate School by the department prior to the initiation of the residence year. A form is available at the Graduate School.

Several alternative residency options are available for students in Education. Students should check with their advisors.

General Doctoral Examination

A general examination, often called the "preliminary examination," is required of all applicants for the degrees of Doctor of Philosophy and Doctor of Education. It consists of written and oral testing by the student's advisory committee in the student's major and minor. The written portion of the examination does not require approval in advance by the Graduate School. The oral portion, however, does require such approval. Arrangements must be made by application to the Graduate School one week in advance. The primary purpose of the general examination is to assess the student's understanding of the broad body of knowledge in a field of study. The examination also affords the advisory committee an opportunity to review the student's proposed research and understanding of research methods and literature in the chosen field. If the general examination reveals deficiencies in any of these areas, the advisory committee may recommend remedial work, re-examination, or discontinuation of doctoral study.

The general oral examination should be conducted immediately after the successful completion of the written examination and well before the final examination. At least one complete quarter – preferably more than one – must intervene between the general oral and final examinations. The two examinations thus cannot be taken either in the same quarter or in consecutive quarters. Some departments have specific requirements for conducting these examinations, and the student should become familiar with these. Successful completion of the oral examination requires unanimous support of the student's advisory committee. If the general oral examination is failed, a re-examination may be given on recommendation of the committee and approval by the dean of the Graduate School. Further examinations require exceptional circumstances and approval by the Graduate Council.

The student becomes a candidate for the degree on successful completion of the general examination and has four calendar years thereafter to complete all additional requirements. If unable because of reasons beyond the candidate's control to complete the requirements on time, the student may petition the dean of the Graduate School for an extension. Otherwise, the student will revert to the status of an applicant.

Final Examination

After the first draft of the dissertation has been completed and has been approved by the student's advisory committee, it is submitted to the Graduate School. An outside reader will be appointed to review the dissertation. However, the student's advisor may request appointment of the outside reader at any time rather than waiting until after the dissertation is drafted. When the Graduate School has approved the dissertation, the student may apply for the final examination on a form obtained from the Graduate School. The application must be filed with the Graduate School at least one week in advance.

The examination is administered by the student's advisory committee. The representative of the Graduate School, the outside reader, also attends and participates. The examination, which generally is oral but may be both oral and written, includes the major and minor fields and a defense of the dissertation. Successful completion requires unanimous support of all members of the committee. Any member of the Graduate Faculty may attend.

If a student fails the final examination, a re-examination may be given on recommendation of the advisory committee and approval by the dean of the Graduate School. Further examination requires exceptional circumstances and approval of the Graduate Council. In addition to successful completion of all examinations, final copies of the dissertation must be submitted to the Graduate School before the degree is conferred. (See Graduate School Calendar for deadline.)

THE DOCTOR OF PHILOSOPHY DEGREE

The Doctor of Philosophy is conferred in recognition of the mastery of a special field of learning as shown by the satisfactory completion of a prescribed course of study and investigation, the successful passing of general examinations covering the major and minor fields, the preparation of an acceptable dissertation reflecting high achievement in scholarship and independent investigation, and the passing of a final examination on the dissertation and related subjects.

The degree is a research degree. It is not conferred merely upon fulfillment of technical requirements, but awarded in recognition of the ability to think and work independently, originally, and creatively in a chosen field.

Some departments have special requirements for the degree, and the student will be governed by those, including the ones listed in departmental statements under Courses of Instruction elsewhere in this *Bulletin*.

Language Requirements

Language requirements for graduate degrees vary with departments. The Department of Foreign Languages offers proficiency courses in a number of languages. The department also offers reading proficiency examinations for those students who wish to demonstrate proficiency without taking a course. Such students must apply to the Graduate School for these examinations by the deadline listed in the Graduate School calendar in the front of this *Bulletin*.

Course Requirements

The Graduate School requires a minimum of 46 hours of graded (eg. A, B, C) graduate course work (600-level and above) beyond the bachelor's degree, at least 30 hours of which must be completed under 09 classification at Auburn University. A doctoral student must also complete 46 hours of additional course work (may include ungraded courses, 500-level courses, 699 and 799). However, some departments require more, and requirements may vary according to a student's background and interests. A maximum of seven hours of 699 (Research and Thesis) from a completed master's program may be counted.

All doctoral students must complete a minimum of 15 hours of 799. Enrollment in 799 may take place at any time the student and the advisory committee deem appropriate. During any one quarter, the number of hours of 799 in which the student enrolls should reflect the amount of time being spent on the dissertation and the degree to which university resources are being utilized. Students may enroll, during any one quarter, for as few as one hour or as many as 15 hours of 799. The requisite 15 hours of 799 should be included in the plan of study. No grade is assigned.

The Dean of the Graduate School is authorized to approve alternatives to these course work requirements in exceptional cases and on an individual basis.

Dissertation

A dissertation is required of all candidates for the degree of Doctor of Philosophy. It shall constitute a contribution to knowledge. The student conducts the research and prepares the dissertation under the direction of the major professor. Only dissertations prepared according to the *Guide to the Preparation and Submission of Theses and Dissertations*, available at the University Bookstore, are accepted by the Graduate School.

All dissertations must be microfilmed by University Microfilms International of Ann Arbor, Michigan, which publishes the abstract in Dissertation Abstracts. The student is required to pay for this service.

THE DOCTOR OF EDUCATION DEGREE

The Doctor of Education is a professional degree conferred in recognition of ability and achievement in some special field or fields of education. This is shown by satisfactory completion of a prescribed course of study, application of scientific principles in classroom teaching, administration, the supervision of instruction, or other aspects of educational programs; preparation of a dissertation demonstrating ability to investigate an education problem with originality and independence of thought; successful completion of examinations showing a satisfactory grasp of a field of specialization and its relation to allied subjects; and recognized leadership in a specialty as shown by at least three years of successful experience.

Language Requirement

A foreign language may be required in cases in which the candidate's specialty or dissertation is such that the advisory committee considers a reading knowledge of a foreign language to be appropriate. Language examinations will be given and evaluated by the Foreign Languages Department in cooperation with the student's advisory committee and the Graduate School. Students must apply to the Graduate School for these examinations by the deadline listed in the Graduate School calendar in the front of this *Bulletin*.

Course Requirements

The major is divided into General Professional Education, Area of Specialization and Other Approved Courses. The General Professional Education requirements consist of a minimum of 12 hours in Foundations of Education and 12 hours in Educational Research. Courses in Area of Specialization and Other Approved Courses constitute the remainder of the plan of study. The program should include a minimum of 120 hours beyond the bachelor's degree, not counting 799, which is Research and Dissertation, plus a dissertation. A maximum of seven hours of 699 (Research and Thesis) from a completed master's program may be counted. At least 80 hours of the 120 must be in courses at the 600 or 700 level. When registering for 799, students may register for as little as one quarter hour at a time, but must complete at least 12 quarter hours. No grade is assigned. The 12 hours of 799 should be included in the plan of study.

The plan of study should be developed cooperatively by the student and the student's advisory committee and be submitted to the Graduate School for approval by the end of the student's fourth quarter in the doctoral program.

Dissertation

A dissertation is required. It should be a critical study of a significant education problem, an original work in a significant field of education, or a creative work involving new and original procedures for the improvement of education. The student conducts the research and prepares the dissertation under the direction of the major professor.

The Graduate School will accept only dissertations prepared according to the *Guide to the Preparation and Submission of Theses and Dissertations*, available at the University Bookstore.

All doctoral dissertations must be microfilmed by University Microfilms International, Ann Arbor, Michigan, which also publishes abstracts in *Dissertation Abstracts*. The student is required to pay for this service.

SUMMARY OF PROCEDURES FOR DOCTORAL DEGREE PROGRAMS

The student should:

1. Obtain application forms from the Graduate School and apply by submitting all required materials to the Graduate School by the deadlines published in this *Bulletin*. The Graduate School forwards the application to the appropriate departmental screening committee. The department head then makes a recommendation to the Graduate School dean, who sends a letter notifying the applicant of the decision.
2. Apply for an assistantship, if applicable, through the department involved.
3. Become familiar with the requirements for the doctoral degree as published in this *Bulletin*.
4. Consult with the departmental advisor and become familiar with departmental procedures.
5. Obtain electronic permit for registration from the Graduate School. Plan a schedule of study for the first quarter with advisor.
6. Submit a proposed schedule for fulfilling the residency requirements. Forms are available at the Graduate School.
7. Establish an advisory committee through the major professor and department head. Official appointment of the advisory committee occurs when the plan of study is approved by the Graduate School.
8. Obtain forms XV or XV-A from the Graduate School on which to file the plan of study and submit to the Graduate School a plan approved by the advisory committee and department head.
9. Complete course work, including language requirements, if any, as detailed in the plan of study.
10. Arrange for the general written and oral examinations through the advisory committee. After the written examination, schedule the general oral examination at least one week in advance using a form obtained from the Graduate School.

11. Submit the dissertation proposal for approval by the advisory committee and become familiar with the *Guide to the Preparation and Submission of Theses and Dissertations*, available at the University Bookstore.
12. Request graduation check in the Graduate School no later than the last day of the quarter (graduation day) prior to the quarter of graduation.
13. Indicate expected graduation during registration for the final quarter or notify Graduate School no later than the fifth class day.
14. Prepare dissertation and submit a committee-approved first draft to the Graduate School.
15. Study recommendations of the outside reader and make appropriate changes in the dissertation.
16. On approval of the dissertation by the dean of the Graduate School, arrange for final oral examination.

GRADUATE DEGREES OFFERED

Accountancy — M.Ac.

The Master of Accountancy is a professional non-thesis degree program in accounting. Criteria for admission and degree requirements are established by the School of Accountancy. This program is available to individuals with the equivalent of an undergraduate major in accounting.

Requirements for the M.Ac. include 45 quarter hours of course work and a comprehensive examination. Students may choose from three areas of study, a financial/auditing concentration, an accounting information systems concentration and a tax concentration.

Information concerning specific requirements may be obtained by contacting the Director of Graduate Programs, School of Accountancy.

Aerospace Engineering — M.A.E., M.S., Ph.D.

Graduate study in aerospace engineering leads to the degrees of Master of Science, Master of Aerospace Engineering and the Doctor of Philosophy. The graduate program prepares students for careers in the aerospace industry, in government laboratories and in academia. Studies for the Ph.D. also are designed to produce research scholars.

Applicants should have a bachelor's degree in aerospace engineering or its equivalent from an institution of recognized standing, plus satisfactory GRE scores. Degrees in mathematics, physics and certain other engineering disciplines may also be appropriate for entrance into the graduate program. Applications must be approved by the department's committee on graduate study.

For the Master of Science degree, the student must complete an approved program of at least 45 credit hours in aerospace engineering or closely related supporting subjects, with a minimum of 30 hours at the 600-level or above. The Master of Science degree requirements include the completion of a thesis under the supervision of a major professor and an advisory committee.

The Master of Aerospace Engineering degree is a non-thesis degree for which the student must complete an approved program of at least 48 hours of course work with a minimum of 33 hours at the 600-level or above. A suitable project in aerospace engineering, culminating in a final written report approved by the student's advisory committee, may be substituted for three credit hours of course work. An oral presentation is also required for the M.A.E. degree.

For the Doctor of Philosophy degree, the student must complete a minimum of 92 credit hours beyond the bachelor's degree. A plan of study will be arranged on an individual basis and students may elect to specialize in the general areas of aerodynamics, astrodynamics, control theory, flight dynamics, propulsion, structures or structural dynamics. A written qualifying examination and a general doctoral examination, with both written and oral parts, are required of all doctoral candidates. An oral defense of the doctoral dissertation is also required of each student.

There is no language requirement for the master's or Ph.D. degree.

Agricultural Economics — M.S., M.Ag., Ph.D.

The Master of Science and Master of Agriculture are offered in both Agricultural Economics and Sociology (Rural). The Doctor of Philosophy in Agricultural Economics is offered through the interdepartmental doctoral program in Economics. Admission to any of the masters degree programs requires a bachelors degree from an accredited institution with a major generally either in economics (agricultural) or sociology (rural), as appropriate to the desired degree. If the bachelors degree is obtained in another discipline, the student must have the equivalent of 25 quarter credit hours in courses closely related to the student's masters degree program area. Such courses might include economic theory, quantitative methods and statistics, and/or closely related subjects acceptable to the major professor and advisory committee.

The M.S. in Agricultural Economics requires a minimum of 47 quarter hours of graduate credit, including seven credit hours for a thesis. At least 30 hours must be taken in the department for the major and the remaining 17 may be in closely related and approved areas. The major work, including the thesis, will be planned in the student's special field of interest which may be farm management, agricultural marketing, production economics, prices and pricing, land economics, agricultural finance, agricultural policy, or other approved areas. The minor usually will be in general economics and may include courses in economic theory, history of economic thought, monetary theory, fiscal policy, economic cycles, statistics, finance, or other related courses acceptable to the major professor.

Either the M.S. or M.A. in sociology is available through the interdepartmental graduate program in sociology. Students interested in emphasizing rural sociology in their graduate programs must include at least 15 graduate credit hours in rural sociology courses plus seven credit hours of thesis credits within the minimum of 47 quarter hours required for the degree. A language requirement must be met to qualify for the M.A. degree, while a proficiency in use of the computer must be demonstrated for receipt of the M.S. degree.

The Master of Agriculture requires no thesis but the student must complete a minimum of 48 quarter hours, 30 of them in the major, as approved by the major professor and the advisory committee.

The M.B.A. in Agribusiness or Natural Resources and Environmental Management is offered in a program coordinated between the College of Business and the Department of Agricultural Economics and Rural Sociology. Requirements include 60 quarter hours above the baccalaureate degree, 35 hours in business and 25 hours in agricultural economics or a closely related field, as approved by the Director of the M.B.A. program and the major professor in agricultural economics.

The Ph.D. is offered through the interdepartmental doctoral program in economics administered jointly through the Department of Agricultural Economics and Rural Sociology, the Department of Economics and the School of Forestry. Students in agricultural economics must complete a minimum of 40 quarter hours of course work beyond a Ph.D. preparatory M.S. degree, or 80 quarter hours of graduate course work beyond the baccalaureate degree, plus a minimum of 15 quarter hours of dissertation. The student must also pass a general doctoral examination with special focus on microeconomics, macroeconomics, quantitative methods and a chosen specialty field, followed by a final oral examination covering both disciplinary subjects and the dissertation. There is no language requirement.

The Ph.D. is offered through the interdepartmental doctoral program in Economics.

Agricultural Engineering — M.S., Ph.D.

Graduate study in Agricultural Engineering leads to the degrees of Master of Science and Doctor of Philosophy. The graduate program prepares students for engineering careers in industry, the private sector, the public sector, and in academic institutions.

There is no foreign language requirement.

For a major in agricultural engineering at the master's level, the student must have a bachelor's degree in agricultural engineering or closely related engineering discipline and a satisfactory GRE score. The M.S. requires a minimum of 45 quarter hours of course work which includes seven quarter hours for a thesis. A minimum of 30 quarter hours shall be completed in the major field, but the courses need not be restricted to this department. Minor work of 15 hours usually is required. This usually is in a different field but one which supports the major field. The minor may be taken in this department. A mixed major may be taken in two closely related departments upon recommendation of the department and approval of the deans concerned. A minor is optional in such a case.

The student develops a program according to the student's interest and departmental advice.

The master's degree with thesis is required for admission to the Ph.D. program. The program consists of a minimum of 92 quarter hours of course work beyond the bachelor's degree, including credits for research on the thesis or dissertation. At least 61 of the 92 hours must be in 600- and 700-level courses, which are those for graduate students. The student must enroll for a minimum of 15 hours of 799, Research and Dissertation.

A student with interest in forest engineering may pursue master's and Ph.D. degrees in agricultural engineering.

Agronomy and Soils — M.S., M.Ag., Ph.D.

Graduate training in this department enables outstanding students to achieve a high level of scholarly attainment in the soil and crop sciences. Within these broad areas, research training and experience may be gained in the specialized fields of soil fertility and plant nutrition; soil chemistry; soil genesis, morphology and classification; soil mineralogy; soil physics; soil microbiology; plant breeding and genetics; weed science; forage, fiber and grain crop production; crop ecology; environmental quality; and turf management.

Students should hold a bachelor's degree from a recognized institution and have a satisfactory GRE score. Specific undergraduate course requirements depend on the student's major interest. A list of required courses may be obtained from the department.

Majors and minors are offered in crops and soils. Students majoring in soils usually have a minor in chemistry, crops, entomology, plant pathology, plant physiology or physics. Crops majors usually take a minor in botany, soils, chemistry, entomology, plant pathology, plant physiology, statistics or zoology.

There is no specific schedule of courses for graduate students in this department. The course of study is determined by the student and advisory committee.

There is no foreign language requirement.

Three degrees are offered: the Master of Science, earned only under the thesis option; the Master of Agriculture earned under the non-thesis option; and the Ph.D., which requires a dissertation. The department also participates in the interdisciplinary minor in environmental studies.

Graduate students in a program requiring a thesis or a dissertation will register for at least one hour of AY 699 or AY 799 per quarter. Research Associates who also are graduate students are exempt from this requirement but must complete 15 hours of 699 in the master's program or 30 hours of 799 if in a Ph.D. program.

Anatomy and Histology — M.S., Ph.D.

Most students seeking a major in anatomy and histology will be expected to possess the D.V.M. However, a limited number of qualified applicants with other basic science degrees may be admitted upon approval of the department graduate faculty. Those applicants lacking suitable courses will be required to correct the deficiencies by taking additional courses.

Students enrolled in the professional curriculum of the College of Veterinary Medicine may be admitted to the dual degree program pursuing either the M.S. or Ph.D. degree, upon approval of the departmental graduate faculty. Acceptance into the dual degree program is generally after completion of the first year of the professional curriculum.

The M.S. and Ph.D. degrees require a minimum of 45 and 92 credit hours, respectively. At least 23 and 61 credit hours must be earned in 600- or 700- level courses for the M.S. and Ph.D. programs, respectively. The remainder may be from 500-level courses. A graduate major of at least 30 quarter hours must be earned in veterinary anatomy and histology courses. A graduate minor of at least 15 hours may be earned in disciplines related to anatomy and histology or other disciplines approved by the student's advisory committee.

There is no foreign language requirement for these graduate degrees. The M.S. and Ph.D. degrees may be earned only under the thesis or dissertation options. All students assigned to GTA, GRA and dual degree positions will assist in teaching for at least two quarters. (Minimum criteria for Ph.D. students are four courses of gross and/or microscopic anatomy, V.M. offering.)

The Ph.D. is offered through the interdepartmental doctoral program in Biomedical Sciences.

Animal and Dairy Sciences — M.S., M.Ag., Ph.D.

Graduate study in animal and dairy sciences is directed toward the Master of Science and Doctor of Philosophy degrees. The graduate program develops candidates for the Ph.D. who will apply their talents in education, industry, government and business. Students seeking an M.S. will be prepared for technical careers in education, industry, government and business. The Master of Agriculture is offered as a non-thesis degree and prepares students for careers in education or business.

For the M.S., the student must have shown satisfactory performance while obtaining a bachelor's degree in the animal sciences or a related area. Applicants lacking suitable courses in the basic sciences will be required to correct deficiencies by taking additional courses. The M.S. requires a minimum of 45 credit hours of graduate work, including at least 30 credit hours in the major field of study. The remainder may be in a minor selected with the consent of the advisory committee. A thesis based on research by the student is required. Majors and minors are available in the areas of animal production (M.S. only), animal behav-

ior, animal breeding and genetics, animal biochemistry and nutrition, physiology of reproduction, and meat science-muscle biology.

The Master of Agriculture requires successful completion of 48 credit hours, 30 of which must be in the agricultural sciences. Additional courses may be required for individual students.

Admission to the Ph.D. program usually requires that the student have an M.S. from a recognized graduate program. However, upon completion of the bachelor's degree, evidence of exemplary potential may be considered for admission. The doctoral program emphasizes original and creative research and includes advanced course work. A dissertation based upon original research is a major requirement. A total of 92 quarter hours of course work beyond the bachelor's degree must be completed in addition to the required hours of research. Majors and minors described for the M.S. also are available for the Ph.D.

There is no foreign language requirement, but knowledge of a foreign language may be recommended by the student's advisory committee. Thesis-option graduate students will register for three hours of thesis or dissertation research per quarter. Research Associates who also are graduate students are exempt from the requirement of registering for Research and Thesis each quarter, but must complete 15 hours of thesis research on a master's program and 30 hours of dissertation research on a Ph.D. program after completing a master's degree. A Ph.D. program not preceded by a master's degree must include 45 hours of dissertation research credit.

Art — M.F.A.

The Department of Art offers a program leading to the Master of Fine Arts, the terminal professional degree in studio art, in drawing, painting and printmaking, and in graphic design and illustration. The objective is to offer advanced study in art in preparation for careers as practicing artists, teachers at the college or university level, or in other art-related enterprises.

Candidates should have earned the B.F.A. or an equivalent in visual art and have taken the GRE. Departmental and graduate school admission criteria are available from the Department of Art.

The M.F.A. program is small and instruction is highly individualized. Maturity and judgment, personal initiative and the ability to work independently are essential for success. Virtually all graduate work is done in independent study courses.

The major field is selected by the student after consultation with the department's Graduate Committee. No minor is required. There is no language requirement.

Completion of the program requires at least 90 credit hours of course work: 65 in studio disciplines, 15 in art history, five in a critical study of personal work and five in AT 698, the Terminal Studio Project. The program requires a minimum of two years. Students may be advised to do more than 90 credit hours to overcome specific deficiencies in undergraduate preparation.

A limited number of graduate assistantships are available. There are opportunities for teaching experience after the completion of 27 credit hours of graduate study.

Botany and Microbiology — M.S., Ph.D.

The Department of Botany and Microbiology offers graduate training leading to the M.S. and Ph.D. degrees in either botany or microbiology. Faculty and facilities are available to support graduate research in a number of areas of botany, microbiology and molecular biology. Areas of specialization in plant biology include developmental anatomy and morphology, cytology and ultrastructure, systematic botany, ecology, environmental and biological mechanisms of stress physiology, lipid and membrane biochemistry and rhizosphere dynamics. Areas of specialization in microbiology include industrial microbiology, microbial physiology, biochemistry and genetics, environmental microbiology, medical and clinical microbiology and virology. Specializations within or bridging plant biology and microbiology include eukaryotic and prokaryotic molecular biology, pathogenic mechanisms of plant-associated microbes, organelle molecular biology and genetic engineering of bacteria and eukaryotic cells or organelles. Modern departmental teaching and research laboratories housed in the new R. Dennis Rouse Life Sciences Building, a nationally registered herbarium housing an extensive collection of southeastern plants, the Donald E. Davis Arboretum, the Plant Science Research Center with state-of-the-art greenhouses, and the extensive facilities of the Alabama Agricultural Experiment Station, including substations at a number of locations in the state, provide excellent facilities for laboratory or field experiments.

Candidates for an advanced degree should have an undergraduate degree in an appropriate area from an accredited institution. Prior training should include 30 to 50 hours of undergraduate botany, microbiology, or approved and allied subjects. Students majoring in allied fields who wish to minor in the department should complete a minimum of 20 hours of botany

or microbiology. A satisfactory score on the general GRE is required.

For the M.S., a major of at least 30 hours may be taken through courses in botany, microbiology and molecular biology. A minor of at least 15 hours may be selected from related fields. For the Ph.D., a major of approximately 60 to 80 hours may be taken from subjects emphasizing various aspects of botany, microbiology and molecular biology. One or more minors, consisting of approximately 15 to 20 hours each, may be taken in related fields. Interdisciplinary graduate minors of 18 to 20 hours are available in biochemistry and cell and molecular biology, ecology, environmental studies and plant or microbial molecular biology. Information about these minors is available from departmental coordinators for each area.

M.S. and Ph.D. programs are designed with course work selected to meet the needs of individual students. Except under the most exceptional circumstances, at least 12 months and 27 months beyond the bachelor's degree are required for the M.S. and the Ph.D. degrees, respectively. It is not mandatory that all courses credited toward the Ph.D. be taken at Auburn. A residency year is required for the Ph.D. Students on assistantships which require teaching or research generally take longer to complete the degree requirements.

Ph.D. students must complete an orientation meeting which usually is scheduled during the first quarter of enrollment. Any undergraduate subject matter deficiencies which become apparent during the meeting must be corrected through additional course work recommended by the Orientation Committee.

All graduate students are required to attend the departmental seminar series, BY 640/740 or MB 640/740 during their entire period of enrollment. Students must present a departmental seminar on their thesis or dissertation research during the quarter of the oral or final examination. All other requirements for completing graduate degree programs are outlined in the Departmental Graduate Student Handbook.

Building Science — M.B.C.

Graduate studies in Building Science leading to the Master of Building Construction provide a unique, individualized course of study for a select number of students seeking advanced construction education. The Master of Building Construction is a non-thesis degree program requiring a minimum of 48 quarter hours of academic credit, including a core of 15 hours of BSC graduate courses. Applicants holding an undergraduate degree unrelated to construction will be required to take additional course work.

Admission to the program is competitive; enrollment is limited. Minimum requirements include a baccalaureate degree from an accredited four-year college or university and satisfactory scores on the General Test of the GRE. Departmental evaluations are based on exam scores, undergraduate GPA, professional experience and a personal interview.

Evaluation of academic and experiential qualifications of each applicant coupled with the area of interest will determine the total course requirement for that applicant.

There is no foreign language requirement.

Business Administration — M.B.A., M.S., Ph.D.

Graduate programs in Business are fully accredited by the American Assembly of Collegiate Schools of Business (AACSB) and include the Master of Business Administration, the Master of Accountancy, the Master of Management Information Systems, the Master of Science and the Doctor of Philosophy in Management, and Economics.

Application for admission to graduate programs in business should be made directly to the Graduate School. The application should be accompanied by test scores on the Graduate Management Admission Test (GMAT), except for applications to the M.S. or Ph.D. in Economics which should be accompanied by test scores on the Graduate Record Examinations (GRE). Supplemental application forms are also required for the M.B.A. program.

MASTER OF BUSINESS ADMINISTRATION (MBA)

The M.B.A. is a broad managerial program to train individuals with either business or non-business backgrounds for positions with both profit and non-profit firms.

The M.B.A. consists of 15 hours of accelerated foundation-level courses and 58-62 hours of advanced courses. Some courses may be waived by strong academic achievement in selected undergraduate business courses, with the average undergraduate business student completing the degree in 67 quarter hours. Auburn students may be able to waive foundation courses based upon strong academic performance in EC 301 (or 202 and 203), AC 215 (or 211 and 212), FI 361, MT 331 and MN 310 and MN 342. In addition, applicants are required to complete a course in calculus as well as a course in statistics prior to admission. Most

students can complete the program in six to seven quarters of full-time work.

Additional information concerning the program may be secured by contacting the director of the M.B.A. program, Lowder 503, (334) 844-4060.

For programs in accountancy, economics, finance, management and marketing, see individual listings.

Chemical Engineering — M.Ch.E., M.S., Ph.D.

The Chemical Engineering Department offers graduate programs leading to the degrees of Master of Science and Doctor of Philosophy. Specialized courses and research training are provided in a wide variety of specialties within chemical engineering or related interdisciplinary areas. Some of these specialties include: surface science, biochemical engineering, coal and waste liquefaction, catalysis, pulp and paper engineering, environmental engineering, enzyme engineering and technology, computer-aided process design and simulation, novel bioseparations systems, chemical kinetics and reactor design, biomedical engineering, process control and optimization, thermodynamics, advanced energy research, mass and energy transfer, electrochemical engineering, polymer engineering, interfacial phenomena, process synthesis, material science, and space science. Additionally, individualized interdisciplinary programs which cross the traditional departmental boundaries are encouraged. These may include collaborative work in chemistry, engineering disciplines, physics, mathematics, agriculture, forestry, biology, microbiology, genetics and health sciences or other areas.

The applicant must hold a bachelor's degree or its equivalent from an institution of recognized standing and must have the prerequisite undergraduate experience in areas of study relevant to the proposed graduate program. If the applicant's undergraduate degree is other than chemical engineering, an individualized plan of study will be developed to impart the critical skills inherent in the bachelor's chemical engineering program. All applicants will be evaluated on an individual basis by the Chemical Engineering Graduate Committee.

The Master of Science Degree may be earned only under the thesis option. There is no language requirement for this degree. A total of 45 quarter hours of work is necessary, including formal courses, seminars and directed reading. Seven hours of credit is provided for the thesis. The following core courses must be taken: CHE 600, 610, 611, 620 and 625.

The Master of Chemical Engineering also is offered. It is a non-thesis degree oriented toward engineering design and practice. It has no residency requirement and can be earned entirely through the Engineering Outreach Program. The degree requires 48 quarter hours with a minimum of 24 at the 600-level. In-depth understanding is provided through a minimum of 33 graduate course hours in the major, chemical engineering, plus 15 graduate course hours in technical electives from engineering, science, mathematics, or business which are tailored individually to the student's background and interests. There are three core courses: CHE 610, 620 and 625.

The Doctor of Philosophy provides for advanced course work and emphasizes original, creative research. A dissertation embodying the results of this research represents the major portion of the requirements for this degree. A minimum of 92 quarter hours of graduate work past the bachelor's degree is necessary.

Four calendar years beyond the bachelor's degree or three past the master's degree usually are needed to complete the Ph.D.

Core courses required include the five for the M.S. plus 600- and 700-level courses in numerical methods, process dynamics and control and catalysis or advanced organic chemistry.

The written General Examination must be taken by those seeking a Ph.D. It is offered each year during winter quarter and students are encouraged to take it in their first year of graduate study. It consists of three parts: a written examination based on undergraduate course work, a graduate course work evaluation based on CHE 600, 610, 611, 620 and 625 and a research proposition for evaluation of research potential.

There is no language requirement for the Ph.D.

Chemistry — M.A.C.T., M.S., Ph.D.

Graduate study in chemistry leads to the degrees of Master of Science and Doctor of Philosophy. All entering students must take the five required core courses: CH 610, 620, 630, 640 and 650. By the end of the second quarter, graduate students must submit a plan of study which details the courses which will be taken. This is done with the assistance of the major professor and with the consent of the student's advisory committee. For the M.S., the plan of study will consist of a minimum of 45 hours, including the core courses listed above,

25 hours; and CH 699, six hours; and CH 670, one hour. For the Ph.D., 92 hours of courses must be completed. These must include the core courses listed above and one hour of CH 670. The rest of the courses usually are taken in the major area. Directed Study, CH 691, may be taken for a maximum of 30 hours. A minimum of 15 hours of CH 799 must be completed by Ph.D. students, who also must pass written and oral general examinations. All graduate degree candidates must orally present their research and defend their theses or dissertations in the final oral examination.

Civil Engineering — M.C.E., M.S., Ph.D.

The Department of Civil Engineering offers graduate-level instruction and research programs leading to the degrees of Master of Civil Engineering, Master of Science and Doctor of Philosophy. The objectives of these programs are to provide qualified students an opportunity for advanced training and specialization and to enable them to gain experience in conducting engineering research and in the interpretation and communication of their findings. The department offers majors and minors in construction engineering and management, environmental engineering, geotechnical engineering, hydraulics/hydrology, pavements and materials, structural engineering and transportation engineering. The minor may be chosen outside the department in supportive disciplines such as applied statistics, building science, computer science or mathematics, provided there is justification for doing so.

All applicants must have earned a baccalaureate degree in civil engineering — B.C.E., B.S. or B.S.C.E. — or a closely related area and must have completed such formal training as to warrant advanced study in the major and minor fields. There is no formal foreign language requirement.

A thesis is required of all candidates for the M.S. A minimum of 45 quarter hours of graduate-level course credit must be completed satisfactorily. At least six of the 45 hours must be in CE 699 and at least 38 hours must be in graduate course work other than CE 699. Candidates must pass a comprehensive examination covering the major, minor and research and thesis.

Admission requirements for the Master of Civil Engineering are basically the same as those for the M.S. The program consists of a minimum of 48 quarter hours of graduate-level courses. At least three of the 48 hours must be in CE 698 and at least 45 hours must be in graduate course work other than CE 698. Candidates must pass a comprehensive examination covering the major, minor and the engineering project involved.

Ph.D. program applicants must have earned the master's degree in civil engineering or a related area, or must have completed at least a year of study at the graduate level. Performance in either case must have been of such quality as to justify admission to the doctoral program.

The Ph.D. is conferred in recognition of mastery of a specific field of knowledge and a contribution to that engineering discipline through the doctoral dissertation. The degree is a research degree, requiring not only completion of certain technical requirements but proof of the candidate's ability to work independently within an engineering research environment.

A doctoral student must complete a written comprehensive examination with a follow-up oral critique administered by the student's advisory committee. The examination may not be taken sooner than one year after the student begins doctoral course work. Additional course work may be prescribed to strengthen deficiencies where examination results indicate a lack of significant academic preparation. Upon successful completion of the examination, the student becomes a candidate for the Ph.D. One retake may be permitted but no earlier than one year after initial failure.

After successfully completing the comprehensive examination, the doctoral candidate will defend the selected dissertation topic, which must represent a significant contribution to state-of-the-art knowledge. This may be included in the oral critique of the comprehensive examination if the advisory committee agrees. Once the committee approves the research topic, the doctoral candidate may proceed with the research and dissertation. When it is completed, the candidate will defend the completed dissertation before the advisory committee and the outside reader appointed by the Graduate School.

Communication — M.A.C.T., M.Com., M.A.

The graduate program offers the Master of Arts and the Master of Communication.

Applicants must hold bachelor's degrees from accredited institutions. The M.A. requires 45 hours beyond the bachelor's degree, including a thesis. The M.Com. requires 50 hours, including appropriate field experience, but does not require a thesis. Students entering either program without previous work in communication must earn an additional 15 credit hours

which may be at the undergraduate level.

The communication major requires 30 quarter hours in Communication for the M.A. and 35 for the M.Com., including COM 601 and 602. A minor of 15 hours may be taken inside the department or in related areas under both programs.

There is no foreign language requirement.

Communication Disorders — M.C.D., M.S.

The Department of Communication Disorders offers programs in Speech-Language Pathology and Audiology. Both are accredited by the Council on Academic Accreditation of the American Speech-Language-Hearing Association (ASHA).

Two degree options are available; neither has a language requirement. The Master of Science requires a minimum of 45 hours of graduate course work, including CD 699, Thesis. CD 658 or 668, Field Experience, is optional, depending on clinical experience. The Master of Communication Disorders (M.C.D.) requires a minimum of 50 hours of graduate course work and appropriate field experience (CD 658 or 668). This is a non-thesis degree but it does require the passing of a comprehensive examination.

Master's-level candidates who enter the Communication Disorders programs having majored in another field at the undergraduate level must make up certain prerequisites. This is to ensure an adequate background for the graduate-level courses and that the student will meet ASHA academic requirements. Generally, 10 such courses are prescribed by the student's advisor.

Enough latitude exists that a plan of study may be designed according to the student's career interests; however, the curriculum planned must conform with ASHA academic requirements and Alabama Board of Education certification requirements, if applicable. Students then are prepared for careers in school systems, clinics, hospital/rehabilitation centers, physicians' offices, private practice and for pursuing the doctoral degree.

Community Planning — M.C.P.

Graduate study in planning leads to the Master of Community Planning, a professional degree. The graduate program prepares students for careers in community and urban planning in both the public and private sectors. Planners deal with where people work, play and live; where they shop and learn; how they get from place to place; and how people's communities and neighborhoods work, look and feel. Planners are skilled at evaluating conditions, proposing alternatives and suggesting positive, constructive ways to get things done in the city. This means planning is both art and science — it demands technical competence as well as creativity and sensitivity in the search for better physical and social urban environments. Community planning's primary focus is the physical development of cities and towns. However, several specialty areas of study are available and, for qualified students, there are dual degree options available with Auburn's programs in architecture, landscape architecture, historic preservation and public administration. Each of these options requires separate application. The student must hold a bachelor's degree from an accredited institution and have an acceptable GRE score. Undergraduate programs in one of the environmental design disciplines, engineering, or the physical or social sciences normally provide the best preparation. The adequacy of the applicant's preparation will be reviewed by the faculty. The Master of Community Planning requires 70 quarter hours of graduate course work. Studies include a core curriculum, elective work selected in consultation with the faculty and an oral examination. Electives are organized into an area of specialization and courses may be drawn from a variety of academic programs. There is no language requirement. This is a non-thesis program, although each student must complete a terminal planning synthesis project.

Computer Science and Engineering — M.C.S.E., M.S., Ph.D.

Graduate study in Computer Science and Engineering leads to the degrees of Master of Computer Science and Engineering, Master of Science and Doctor of Philosophy. The graduate program prepares students for computer-related careers in industry, government and teaching. Studies toward the Ph.D. also are designed to produce research scholars. All applications are reviewed by the CSE Graduate Admissions Committee.

For a major in Computer Science and Engineering at the master's level, the student must hold a bachelor's degree or its equivalent from an institution of recognized standing. The student also must have the prerequisite undergraduate experience in areas of Computer Science and Engineering. If the student has deficiencies in the prerequisites, he or she will be required to take appropriate undergraduate courses. All applicants must submit Graduate Record Examination scores for the general test.

The M.S. program requires 45 quarter credit hours, including seven credit hours for research and thesis. The M.C.S.E. program requires 48 quarter credit hours, including five credit hours for the design project. There is no language requirement.

For the Ph.D. program, the applicant must hold a master's degree or have successfully completed a minimum of one academic year of graduate study, from an institution of recognized standing in an area related to the proposed doctoral study. All applicants must submit Graduate Record Examination scores for both the general and the subject (CS) tests. The student will take a written qualifying examination soon after gaining admission to the program. Additional examinations, as described in the general Graduate School requirements, are given throughout the program. There is no language requirement for the Ph.D. The program typically includes at least one academic year of course work and one year of research beyond the master's level.

Consumer Affairs — M.S., M.A.C.T.

Graduate study in consumer affairs leads to the Master of Science Degree. Majors are apparel and textiles and textile science. The department emphasizes integration of basic and applied knowledge from multiple fields to enhance professional skills for careers in product development and design; production management; retail management; merchandising in textile, apparel and retail firms; quality control; and college teaching and research.

The apparel and textiles major requires 45 or more quarter hours, including 18 core course hours (including basic statistics and research methods), 16 or more class hours in an individually designated focus area and a thesis. Students are strongly encouraged to complete a full-time, one-quarter internship in the textile apparel or retail industry. Focus areas incorporate courses in Consumer Affairs and other departments. Designated specialization tracks include consumer behavior and research; forecasting; marketing; production management; retail management; international; design and product development; entrepreneurship; education, educational media and training methods; and extension and community development.

The textile science major is offered as a joint degree program with the Department of Textile Engineering and requires 45 quarter hours, including thesis completion. This program offers course work and research possibilities in textiles from fiber to ultimate consumer. Core courses focus on fabric structures and properties; fiber/polymer structure and properties; dyeing, finishing and analysis. Areas for major and minor can be chosen to take advantage of the breadth of the program, preparation for industrial and government careers, or for further graduate study.

Specific program requirements and application information may be obtained from the department head or graduate program officer. Students interested in the textile science program may apply for admission in either department and should have a degree in textiles, engineering, physical or chemical science, or show other evidence of scientific aptitude. Entrants with limited undergraduate backgrounds in their chosen area may need to complete some undergraduate courses. A foreign language is not required.

Graduate research and teaching assistantships are available within the Department of Consumer Affairs. Ongoing departmental research provides opportunities to gain experience in research techniques. Departmental interaction with textile, apparel and retail companies gives students valuable exposure and contact opportunities for research, internships and career positions.

Counseling and Counseling Psychology — M.Ed., M.S., Ed.S., Ed.D., Ph.D.

Master's, specialist and doctoral degrees are offered in the Counseling and Counseling Psychology Department. Areas of specialization are in school counseling (CPS), school psychology (CSP), college student development (CSD), community agency counseling (CCA), counselor education (CED) and counseling psychology (COP).

Master's degree programs prepare students for entry-level professional positions as counselors in a variety of human service agencies such as public schools, community mental health centers, drug and alcohol treatment programs and university counseling centers.

The specialist and doctoral degree programs provide advanced preparation in the delivery of counseling and psychological services and prepare students for supervisory and leadership roles in schools, human service agencies and in higher education. The doctoral programs also require that students demonstrate skills in independently conducting research through the dissertation.

Following completion of course work, students in all programs must pass a comprehensive written and/or oral examination covering all program content. All departmental programs require extensive extramural internships in placements related to the area of professional preparation.

The master's degree programs in school counseling, community agency counseling and college student development are accredited by the Council for the Accreditation of Counseling and

Related Educational Programs (CACREP). The doctoral degree program in counselor education is accredited by CACREP. The master's and specialist degree programs in school psychology and school counseling are approved by the Alabama State Department of Education and by the National Council on Accreditation of Teacher Education (NCATE). The counseling psychology doctoral degree program is accredited by the American Psychological Association (APA).

To be considered for admission for any of the department's programs, an applicant must submit application materials directly to the Graduate School. Concurrently, applicants submit an application supplement to the department. Provided that general Graduate School admission requirements are met, the department admissions committee considers all submitted materials and determines whether to issue an invitation for an admissions interview. All admissions decisions to doctoral programs in the department occur in the spring quarter. Application materials for doctoral studies should be received by the department by Feb. 1.

Admissions decisions for master's and specialist degrees occur in spring quarter for applicants who want to begin their studies in the summer quarter (March 15 deadline for completed applications) and in the summer (June 15 deadline) for applicants who want to begin in the fall quarter. Completed applications for fall admissions to master's and specialist programs will also be considered at the March 15 deadline. The department does not make admissions decisions for winter and spring quarters.

Applicants are advised that, for some of the programs, the faculty typically prefer GRE scores which exceed the minimum set by the Graduate School. Moreover, credit hour requirements for master's degree programs in the department exceed the Graduate School minimum of 48 hours. Similarly, the Graduate School requirements of 92 and 120 hours for the Ph.D. and Ed.D. degrees are typically exceeded by doctoral programs in the department. More specific details about the requirements and policies for each of the programs are contained in materials available from the department.

Curriculum and Teaching — M.Ed., M.S., Ed.S., Ph.D.

The Department of Curriculum and Teaching prepares teachers and leaders in early childhood, elementary, middle school, secondary, post-secondary, music and reading education. Secondary and post-secondary teaching fields are English, foreign languages, mathematics, science and social science. Graduate study leads to Master of Education, Master of Science, Specialist in Education and Doctor of Philosophy degrees and to fifth- and sixth-year certification in Alabama.

Those seeking full admission to graduate programs must have a bachelor's or master's degree from an accredited college or university and must submit GRE scores for verbal and quantitative subtests. Admission to doctoral programs requires a minimum 1,000 combined verbal and quantitative score, including minimum scores of 450 on both subtests. Admission to Specialist in Education programs requires a minimum 800 combined verbal and quantitative score, including minimum scores of 350 on both subtests. Students wishing sixth-year certification should complete a Specialist in Education degree program in the appropriate area of specialization.

Traditional master's degree programs leading to Alabama A certification require at least 48 quarter hours, including course work in foundations of education, eight hours; evaluation of teaching and learning, four; and 32 hours in the area of specialization, including courses in the teaching field and specialized education courses. Students majoring in a secondary education teaching field must earn at least 24 hours in their teaching fields. Master of Science programs require a thesis.

The Fifth-Year Program for Teacher Certification is available for individuals with appropriate bachelor's degrees who did not complete requirements for certification to teach. Completion of a Fifth-Year Program may lead to a Master of Education degree and equivalent Alabama certification. Applicants must have a GPA of at least 2.75 on all undergraduate work attempted and receive a passing score on the Alabama Basic Skills Test. Students in the Elementary Education program must complete a minimum of 76 hours and must be full-time students for five consecutive quarters, beginning with the summer quarter. Students in Secondary or Music Education programs must complete a minimum of 77 or 78 hours, including at least 62 hours of graduate course work. Students in those programs may take the remaining 15 or 16 hours as undergraduates, with special permission, or as undergraduate deficiencies after admission to a Fifth-Year program. Students in Secondary or Music Education programs may begin any quarter and may enroll as full-time or part-time students. All Fifth-Year programs include courses in the teaching field, professional courses and a one-quarter internship.

Specialist in Education degree programs result in Alabama AA certification. These programs

require at least 48 hours beyond the master's degree and include at least 20 hours in the teaching field and 20 in education. Candidates for Ed.S. degrees must complete a field project.

Doctoral programs consist of no fewer than 120 hours beyond the bachelor's degree. Research methods and statistics, 24 hours, and foundations of education, 12, are components of all Ph.D. programs. The remaining hours are divided between the area of specialization and approved support courses. Students in secondary education must complete at least 40 hours in the teaching field. Those employed or seeking employment in post-secondary education are advised to include at least 60 hours in the teaching field. A candidate for the Ph.D. must register for at least 15 hours of doctoral research while completing a dissertation.

Discrete and Statistical Sciences — M.A.M., M.P.S., M.S., Ph.D.

Admission is based on Graduate Record Examination scores, undergraduate GPAs and recommendations from former teachers. Admission is not restricted to mathematics majors. For programs in discrete mathematics, students with backgrounds in related applied areas such as computer science, industrial engineering and mathematics education are encouraged to apply for admission. Similarly, admission to the Master of Probability and Statistics program is open to a wide range of undergraduate majors in which statistics is applied. It is desirable but not necessary for students entering this program to have had the equivalent of DMS 560-561 and possibly DMS 562.

The Master of Science degree requires a thesis and an oral defense. Details of this program may be found in this *Bulletin* under "Master's Degree Program." For the Master of Science in Statistics, at least 30 of the 45 hours required must be in statistics, operations research, communications and information science, or probability. It is recommended that students become familiar with computer programming and/or standard statistical packages. The department currently offers the following non-thesis master's degrees:

The Master of Applied Mathematics with concentration in discrete mathematics will give students a strong foundation in several fundamental areas of discrete applied mathematics, such as information theory, coding theory, graph theory, design theory, enumeration, complexity theory and cryptography. The courses to be taken for the degree are chosen by the student and the student's advisory committee within certain constraints.

The Master of Probability and Statistics degree provides a solid foundation for careers involving applications of probability and statistics. Each candidate must complete courses in linear models, multivariate analysis and applied stochastic processes. Candidates also must complete a special project and an additional 18 quarter hours of 500- or 600-level courses approved by the departmental advisory committee.

Detailed course requirements for the Ph.D. are available from the department. They are designed to make sure students have a strong foundation in and understanding of a broad body of knowledge related to their field of study. At least one oral and two written preliminary examinations are required of Ph.D. students. The written examinations are to be on subjects selected with the advice and consent of the student's advisory committee and normally are taken during the second year after admission to the Ph.D. program.

Qualified students may be appointed as graduate teaching assistants in the department. These assistantships provide the opportunity for students to obtain teaching experience under the supervision of experienced staff members. Appointments are subject to periodic review for evidence of satisfactory teaching performance and progress toward a degree. International students must have a TOEFL score of 550 or above. The university also requires that all international students applying for a teaching assistantship submit a score of at least 50 on the Test of Spoken English (TSE).

The Baskervill Fellowship is a full academic year fellowship which is awarded each year to a qualified student in the Division of Mathematics. The department occasionally has Graduate Research Assistantships in conjunction with departmental research programs.

Economics — M.S., Ph.D.

Graduate study in economics leads to the degrees of Master of Science and Doctor of Philosophy. The graduate program prepares students for careers in business, government, teaching and in the case of the Ph.D., scholarly research. The programs permit flexibility to accommodate a wide range of student goals and also permit concentrated study in specific areas of economics.

Applicants must hold a bachelor's degree or its equivalent from a recognized institution and present a minimum of 30 quarter hours of undergraduate course work in economics, including Principles of Economics, Statistics and Intermediate Economic Theory. Students lacking prereq-

visite courses may be required to take more than the 45 hours required for the M.S. degree. All applicants must submit Graduate Record Examinations scores. Admission to graduate work in Economics shall be determined by the department's Graduate Committee.

The candidate for a Master of Science must complete at least 30 quarter hours of course work in Economics, plus the thesis. An additional 15 quarter hours must be taken either within the department or as a minor in another department of the university. An oral defense of the thesis is required. There is no language requirement for the M.S.

The Doctor of Philosophy is offered through the Interdepartmental Doctoral Program in Economics administered jointly through the Department of Agricultural Economics and Rural Sociology, the Department of Economics and the School of Forestry. A minimum of 92 quarter hours of course work beyond the baccalaureate is required, plus the successful completion of a dissertation. Students admitted to the program prior to receiving a master's degree may bypass the thesis requirement. Up to 15 hours of course work may be taken as a minor in some other department. During the third year of study each student must register for EC 698 Economic Workshop (1), which can be taken for credit a total of three times. The student must pass a general examination in microeconomics, macroeconomics and quantitative methods. Written examinations in two fields of specialization also must be passed. Each student must defend the dissertation in a final oral examination. There is no language requirement.

The Ph.D. is offered through the interdepartmental doctoral program in Economics.

Educational Foundations, Leadership and Technology — M.Ed., M.S., Ed.S., Ed.D.

Those seeking full admission to graduate programs in the Department of Educational Foundations, Leadership and Technology must have a bachelor's or master's degree from an accredited college or university and must submit Graduate Record Examination scores for verbal and quantitative subtests. Students who hold master's degrees from accredited institutions and have an undergraduate GPA of at least 2.75 may enroll for course work leading to sixth-year certification.

Master's degree programs require a minimum of 45 (M.S.) to 48 (M.Ed.) quarter hours, including course work in foundations of education (eight hours), evaluation of teaching and learning (four hours) and the area of specialization, including a practicum (32 hours). Master of Science programs require a thesis. These programs may be planned to meet Alabama A certification.

Sixth-year programs result in Alabama AA certification. They require 48 hours beyond the master's degree. Specialist in Education programs also require at least 48 hours beyond the master's degree, including EDL 798, and typically result in Alabama AA certification. Candidates for Ed.S. degrees must complete a field project.

Doctoral programs consist of no fewer than 120 hours beyond the bachelor's degree. Research methods and statistics (at least 20 hours) and foundations of education (12) are components of all Ed.D. programs. The remaining hours are divided between the area of specialization and approved auxiliary courses. A candidate for the Ed.D. must register for at least 12 hours of doctoral research while completing a dissertation.

In addition to the Ed.D. degree, which is offered for areas of concentration in Educational Leadership, the department administers a Ph.D. degree option in Educational Psychology. Within this program there are the two specializations or emphases from which a candidate may choose: learning and research/evaluation. Course work in the learning specialization includes emphases in such areas as cognitive processes, motivation, behavioral change and individual differences. In the research/evaluation specialization, course work includes emphases in such areas as research design, univariate and multivariate statistical analyses, evaluation of the individual, program evaluation, evaluation of teaching, item response theory and advanced measurement.

Electrical Engineering — M.E.E., M.S., Ph.D.

Electrical Engineering offers graduate programs of instruction and research leading to master's and doctoral degrees. Instruction is offered and research facilities are available to support graduate study in automatic controls, communications, digital systems, electromagnetics, electronics and energy conversion and power systems. Additionally, individualized programs that cross the traditional boundaries of engineering, mathematics and the sciences can be accommodated.

For admission at the master's level, the applicant must hold a bachelor's degree or its equivalent from an institution of recognized standing. Master's degree programs are available to graduates of engineering curricula and, in cases of exceptional academic credentials, to graduates of mathematics and science curricula. The M.S. program is the only master's degree program open to on-campus students.

An applicant for admission to the Ph.D. program must hold a master's degree, or have taken a minimum of one academic year of graduate study, from an institution of recognized standing in an area of study related to the proposed doctoral work.

All applicants must submit Graduate Record Examination scores for the General Test.

Applications for admission are reviewed by the departmental graduate faculty. Decisions are based upon the applicant's potential for success in advanced-level study as indicated by letters of reference, GRE scores and previous academic achievement.

The master's degree programs of study require a minimum of 45 quarter hours of work. The M.S. degree program includes six hours of research and thesis. M.S. students must spend at least one quarter of full-time study in residence.

All master's students must pass a departmental qualifying examination before completion of the program. This is a written comprehensive examination covering subjects which are fundamental to electrical engineering.

Students admitted to the doctoral program will take a written qualifying examination soon after entering. Additional examinations are given throughout the program. The program generally consists of a minimum of one academic year of course work and one of research beyond the master's level. A minor of at least 15 credit hours in closely related fields, usually mathematics, physics or other engineering disciplines, is required. A reading proficiency in one or two foreign languages may be required at the discretion of the student's advisory committee.

English — M.A., M.A.C.T., Ph.D.

The Department of English offers programs leading to the Master of Arts, the Master of Arts in College Teaching and the Doctor of Philosophy. Individuals holding a teaching certificate may earn Alabama Class A or AA certification under a state-approved Strengthened Subject Matter Option program. The graduate program prepares students for careers in teaching and research, writing, editing, business and other professions seeking broadly educated individuals skilled in analysis and communication.

For admission to the M.A. or M.A.C.T. program, the student must normally have a bachelor's degree from an accredited institution with the equivalent of 40 quarter hours of credit in upper-division English courses and satisfactory scores on the general portion of the GRE. Applicants should also submit three letters of recommendation, a sample of their writing and a statement of purpose. Applicants lacking the required undergraduate courses must typically make up these deficiencies before they can be admitted to the degree program. For the M.A., students may select a thesis or non-thesis option. The thesis-option requires a minimum of 46 credit hours, including six hours of thesis credit. The non-thesis option requires a minimum of 51 credit hours. With the approval of their advisory committee, students in either option may take up to 10 hours in a minor field. Special concentrations are possible in creative writing (with a creative thesis in poetry or fiction) and in composition. After finishing course work, students must take a three- or four-hour written examination over a departmental reading list. Thesis-option students also take a one-hour oral examination over the completed thesis. For the M.A.C.T., no thesis is required. In addition to 40 credit hours of graduate courses in English, M.A.C.T. students take nine credit hours in Education and complete a one-quarter internship. Students in master's options must demonstrate a reading knowledge of one foreign language.

For admission to the Ph.D. program, the student must normally have a master's degree in English and satisfactory scores on both the general portion of the GRE and the subject test. Applicants should also submit three letters of recommendation, a sample of their scholarly writing and a statement of purpose. The Ph.D. requires a minimum of 92 credit hours beyond the B.A., including 15 hours of dissertation credit. Students with an M.A. in English from other institutions usually need only eight or nine additional courses. After completing course work, students take general doctoral examinations, both written and oral, over three related areas. These areas might include historical periods, a genre, a major author, language and linguistics, or a problem in English or American literature. There are no required courses or area distribution requirements; however, students should be able to demonstrate a broad knowledge of English and American literature at their examinations. After passing these examinations, students write and defend a dissertation. Doctoral students must demonstrate a reading knowledge of two foreign languages.

The department offers financial aid in two forms, fellowships and assistantships. Graduate Teaching Assistantships are generally available for the most qualified students and GTAs pay in-state tuition. The typical teaching appointment is just under half-time. Assistantships are renewable, provided that students teach satisfactorily and make adequate progress to-

ward the degree. A few outstanding applicants also receive first-year fellowships. Review of applications for financial aid will begin on Feb. 15.

Entomology — M.Ag., M.S., Ph.D.

Graduate study in entomology emphasizes basic and applied aspects of the science of entomology and leads to the degrees of Master of Science, Master of Agriculture and Doctor of Philosophy. The graduate program prepares students for careers in teaching, research and extension with a variety of governmental, state, private and industrial opportunities.

For a major in entomology at the M.S. level, the student should have a degree from a recognized institution with adequate training in zoology, botany, chemistry, physics and mathematics and a satisfactory Graduate Record Examination score. Qualified students lacking prerequisite courses may be admitted but will be required by the student's advisory committee to make up any prerequisites without credit. The M.S. requires a minimum of 45 quarter hours and a thesis. A minimum of 30 quarter hours must be taken in entomology and a specialty area of at least 15 quarter hours may be selected from related subject matter fields. The M.Ag. with a specialization in entomology carries the same entrance requirements as the M.S. but is a non-thesis option offered for professional entomologists. It requires a minimum of 48 quarter hours, 30 of which must be in entomology and related courses with the remainder taken from a wide variety of developmental areas as determined by the student's advisory committee.

For a Ph.D. program, the M.S. with thesis and satisfactory GRE scores, including the subject test in biology, are required. In addition to a dissertation based on the student's original research, the program requires 92 credit hours of course work. Of these 92 hours, 46 must be graded (eg. A, B, C) graduate course work (600-level and above), 30 of which must be completed under the 09 classification at Auburn University while registered in the Ph.D. program at Auburn. A doctoral student must also complete 46 hours of additional course work (may include ungraded courses, 500-level courses, 699 and 799). A maximum of seven hours of 699 (research and thesis) from a completed master's program may be counted.

There is no language requirement for the M.S., M.Ag. or Ph.D. degrees.

Finance — M.S.

The Department of Finance offers graduate course work in support of the Master of Business Administration program and work leading to the M.S.(B.A.) in Finance. Students pursuing the MBA. degree may elect to concentrate in finance with 15 hours of approved graduate finance course work. This concentration is administered by the Director of the MBA. program.

The M.S.(B.A.) in Finance is a thesis degree program requiring significant course work in finance. The objective of the program is to prepare students for careers in the finance industry or for further graduate work in business. The degree requirements are determined by the student's advisory committee based on the student's background and areas of interest.

Fisheries and Allied Aquacultures — M.Ag., M.S., Ph.D.

Graduate study in the Department of Fisheries and Allied Aquacultures leads to the degrees of Master of Aquaculture, Master of Science and Doctor of Philosophy. The program prepares students for productive careers in the private and public sectors in aquaculture, aquatic ecology and fisheries biology and management.

Students desiring admission for graduate study should have a degree from a recognized institution and should have adequate course work in biology, zoology, botany, chemistry, physics and mathematics. Qualified students lacking an adequate background in these areas may be admitted but may be required to correct deficiencies after they enroll at Auburn.

The Master of Aquaculture program combines classroom study and practical experience in all aspects of aquaculture on the department's fish farm. Students are not required to submit a thesis. Instead, they take additional course work. A total of 48 hours of course work is required. At least 15 hours must be taken in other departments.

The Master of Science program combines classroom study and an introduction to scientific research. At least 30 hours approved by the student's advisory committee must be taken in the department and at least 15 hours must be taken in related fields in other departments. Students also are required to submit a thesis based on original research.

The Doctor of Philosophy program builds on knowledge and skills obtained from the M.S. degree program and places emphasis on learning to apply the scientific method. Course work is recommended that will provide a solid base of information for the student's dissertation research.

A plan of study will be developed by the student through consultation with the student's advisory committee. Approximately 60 to 80 hours or more (exclusive of research and dissertation) must be taken from subject matter offered in the department. Approximately 30 to 40 quarter hours must be taken in related fields in other departments. The dissertation is a major element of the Ph.D. program. It should emphasize the candidate's capability and potential as a creative scientist. It is not mandatory that all of the doctoral work be done at Auburn.

Financial aid is available through the department for qualified students. It mainly is in the form of Graduate Research Assistantships. Students with assistantships pay tuition at the in-state rate. Information concerning these positions can be obtained by writing directly to the Department of Fisheries and Allied Aquacultures.

Forestry — M.F., M.S., Ph.D.

Graduate study in forestry leads to the Master of Forestry (M.F.), Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) degrees. Master's level programs are available to students with undergraduate degrees in forestry and to those from other fields seeking opportunities in forestry-related careers. Two M.F. options are available. Both are non-thesis programs. One, for students with undergraduate degrees in forestry, involves primarily advanced course work and can be completed in one year. A second M.F. program, for individuals with baccalaureate degrees in fields other than forestry, is a two-year program which begins with a 10-week summer field practicum. The M.F. programs prepare students for a professional employment in business, public agencies, consulting firms and forest industry. The M.S. program, which involves research and a thesis and normally requires two years for completion, can be tailored for students with degrees in forestry, the biological sciences, physical sciences, economics, engineering and business who are interested in sciences and research basic to their areas of prospective employment. Opportunities for these graduates, in addition to those listed for the M.F., may include research and education. Outstanding M.S. students, particularly those interested in careers emphasizing research, education and scholarship, often study for the Ph.D. and then on to careers in research institutions and higher education.

The M.S. and Ph.D. degrees are offered in the fields of forest biology and ecology, forest measurements, forest management/economics, timber harvesting/forest operations and forest products. An urban forestry minor, in cooperation with the Department of Horticulture, is available for M.F., M.S. and Ph.D. degrees. The Ph.D. in economics is offered through the interdepartmental program in economics which is administered jointly by the Department of Agricultural Economics and Rural Sociology, the Department of Economics and the School of Forestry.

In addition to meeting admission requirements of the Graduate School, applicants for graduate study in the School of Forestry are normally expected to achieve scores of 450 on the verbal element and 550 on the quantitative element of the Graduate Record Examination (GRE). Applicants not holding a B.S. in forestry may be required to take necessary background courses. These needs are determined by the student's advisory committee and approved by the Dean of Forestry with due consideration for the student's previous training and experience. There is no foreign language requirement for any of the graduate degrees.

The M.F. degree (for students with an undergraduate degree in forestry) requires a minimum of 48 quarter hours. The M.F. professional degree (for students with baccalaureate degrees in fields other than forestry) requires a minimum of 100 quarter hours and provides/ requires a basic foundation in specified undergraduate course work, plus 30 hours of required graduate forestry course work, five hours of required non-forestry graduate course work, 19 hours of elective graduate course work and an M.F. paper.

The M.S. requires a minimum of 45 quarter hours, including at least 30 in a major area of concentration. Students are required to submit a thesis proposal and a thesis based on original research.

The Ph.D. program requires a minimum of 92 hours beyond the B.S. At least 54 hours approved by the student's advisory committee must be taken in graded (e.g. A, B, C) graduate course work at the 600-level and above. The requisite 15 hours of 799 (but no more) should be included in the plan of study. Students are required to submit a dissertation proposal. The dissertation is a major element of the program.

Additional information on forestry graduate programs and degree requirements can be found in the School of Forestry Graduate Student Guide (<http://www.forestry.auburn.edu/studies/grad/guide.html>).

French — M.A., M.F.S.

Graduate studies in French lead to the Master of Arts (M.A.) or the Master of French Studies (M.F.S.). In addition, the department also offers an International Business/French component to the Master of Business Administration program offered by the College of Business (M.B.A./F.). The graduate program in French prepares students for careers in teaching, government, business, or for Ph.D. studies.

Candidates wishing to pursue the M.A. in French or the M.F.S. must have a bachelor's degree from an accredited institution, with at least 45 quarter hours of undergraduate French above the freshman level and satisfactory scores on the Graduate Record Examination. Candidates for the M.B.A./F. program must take the Graduate Management Admission Test (GMAT). International students also must have acceptable scores on the TOEFL. Applicants lacking course requirements need to make up deficiencies before admission to the graduate program.

The M.A. requires 46 quarter hours and a thesis. The M.F.S. requires 55 quarter hours but no thesis. The French component of the M.B.A./F. degree consists of 30 quarter hours of course work in French. In addition, students must take 45 hours in business beyond the foundation courses. All degrees require passage of comprehensive examinations.

Candidates for the M.A. in French or the M.F.S. must earn a minimum of 40 quarter hours in their major. All Master's degree candidates who are graduate teaching assistants in French are required to take FR 641 every quarter when they hold a teaching assistantship except when the course is not offered. Credit from this course does not count toward the master's degree. For more information, check the student handbook available from the department.

A concentration consisting of 15 quarter hours of graduate-level courses in a related field or fields may be earned as part of any graduate degree offered by the department.

A reading knowledge of one other foreign language is required. This knowledge may be demonstrated by examination, by a two-quarter foreign language proficiency course, or by completion of the first-year sequence (or the equivalent) of a foreign language with a grade of **B** or better.

Teaching assistantships and a limited number of university fellowships are available to qualified students. For more information, please contact the department.

Geology — M.S.

Graduate study in geology leads to the Master of Science degree. The graduate program is oriented toward providing a sound practical background in preparation for employment in industry or government service or for further academic pursuits. The curriculum provides broad training in geology through a series of core courses with the opportunity for specialization through electives, thesis research and directed studies.

For a major in geology at the master's level, the student must have a bachelor's degree in geology from an accredited institution with 60 quarter hours in geology, satisfactory scores on the Graduate Record Examination general test and three letters of recommendation. Undergraduate course deficiencies may be made up during the student's first year in the degree program.

The M.S. degree in geology requires a minimum of 30 hours in graduate-level major courses plus an additional 15 hours in geology and/or a related minor subject. A thesis is required of all students. A summer field camp or comparable acceptable field experience must be satisfactorily completed prior to beginning the second year of the program. Demonstrated competence in Geographical Information Systems (G.I.S.) or demonstrated competence in computer programing (FORTRAN, PASCAL) is required.

Health and Human Performance — M.Ed., M.S., Ed.S., Ed.D., Ph.D.

Graduate study in the Department of Health and Human Performance leads to the degrees of Master of Education (M.Ed.), Master of Science (M.S.), Specialist in Education (Ed.S.), Doctor of Education (Ed.D.) and Doctor of Philosophy (Ph.D.). The advanced programs prepare students for careers in teaching and research in education, industry, government and social and human services.

For a major in Health and Human Performance at the master's level, the student must have a bachelor's degree from an accredited institution and satisfactory Graduate Record Examination scores. Applicants without appropriate undergraduate degree preparation and course requirements may be asked to register in an appropriate undergraduate program before admission to the degree program or may be required to complete specific undergraduate courses prior to degree completion. The M.Ed. requires a minimum of 48 quarter hours and the M.S. requires a minimum of 45 quarter hours and a thesis. Areas of specialization for the master's

program include biomechanics, exercise physiology, health promotion, motor development, motor skill learning and pedagogy.

The Ed.S. degree is a terminal degree and students interested in doctoral study should not enter this program. The master's degree, satisfactory GRE scores, a statement of goals and references are requirements. The program demands 48 quarter hours beyond the master's degree, a field project and an examination on the area of specialization.

The Ed.D. degree program requires a master's degree, satisfactory GRE scores, a statement of goals and references. The student must complete a minimum of 120 quarter hours beyond the baccalaureate, a general examination and a dissertation. Candidates must demonstrate competency in general foundations of education and research with a specialization in teaching and learning in physical education.

Requirements for the Ph.D. program include the master's degree, satisfactory GRE scores, a statement of goals and references. The student must complete a minimum of 92 quarter hours of course work beyond the baccalaureate, a general examination and a dissertation. Areas include biomechanics, exercise physiology and motor behavior.

History — M.A., Ph.D.

Graduate study in history leads to the degrees of Master of Arts and Doctor of Philosophy. The graduate program prepares students for careers in teaching, business, government and research.

For admission to the M.A. program, the student must have a bachelor's degree from an accredited institution with 45 quarter hours of history and a satisfactory GRE score. Applicants lacking course requirements must make up deficiencies before or after admission to the degree program. The M.A. requires a minimum of 51 hours (of which 35 must be in seminar courses, including HY 629) and a thesis. The M.A. program offers a specialization in archival studies, including practical training.

For admission to the Ph.D. program, the bachelor's degree and a satisfactory GRE score are required. The program requires a minimum of 91 hours beyond the bachelor's degree (of which 71 must be at the 600- or 700-level exclusive of thesis or dissertation credit), including HY 739, 760 and a dissertation. Candidates must demonstrate excellence in their major field of history and competence in two minor fields of history on their general qualifying examinations. In addition, students must take a minimum of 20 hours of course work outside their major and minor fields, 10 of which may be in a discipline other than history. Fields in history include (1) United States to 1865 (2) United States since 1865 (3) Latin America (4) Europe 1500-1815 (5) Europe since 1789 (6) History of Technology.

There is no language requirement for the master's degree. The Ph.D. requires a reading knowledge of at least one foreign language as determined by the student's doctoral committee. Language competency should be demonstrated before the student begins the second year of the doctoral program.

Horticulture — M.S., M.Ag., Ph.D.

Graduate study in horticulture is directed toward the Master of Science and Doctor of Philosophy degrees. Graduates are prepared for careers in teaching, research, business, production, public service or extension. Master's level programs are available to students with undergraduate degrees in horticulture and those from other fields seeking opportunities in horticulture-related careers. For the M.S. program, students must have a bachelor's degree in horticulture or a related area from an accredited university and have satisfactory GRE scores. Applicants from related areas will be required to correct any undergraduate course deficiencies. The M.S. requires a minimum of 45 credit hours of graduate work, including at least 30 credit hours in the major field of study. The student's plan of study is individually tailored by the student, major professor and advisory committee to meet the student's career goals. A thesis based on research by the student is required.

The Master of Agriculture is a non-thesis option which requires successful completion of 48 credit hours, 30 of which must be in agricultural sciences. Additional courses may be required for individual students and are determined by the major professor and advisory committee. There is no specific schedule of courses for M.S. or M.Ag. students or a foreign language requirement for any graduate students in horticulture.

Graduate students in a program requiring a thesis or dissertation will register for at least one hour of HF 699 or 799 respectively, per quarter. Doctoral candidates must follow all Graduate School and departmental requirements concerning course work. However, the ad-

visory committee may require additional course work. The doctoral program emphasizes original and creative research with a required dissertation.

Human Development and Family Studies — M.S., Ph.D.

The Department of Human Development and Family Studies offers graduate instruction leading to the Master of Science degree with concentrations in child development, family relations, consumer and family economics and marriage and family therapy; and the Doctor of Philosophy with a focus on interpersonal competence and relationship dynamics within the context of the family. The Department emphasizes the integration of knowledge from various fields for the purpose of understanding and developing professional skills for careers in college or university teaching and research, teaching and supervision of programs for young children, parent education, marriage and family therapy, community service, Cooperative Extension, government, business and industry. The Department operates the Child Study Center, the Birmingham Early Learning Center and the Center for Marriage and Family Therapy for training and research. The marriage and family therapy option is accredited by the American Association for Marriage and Family Therapy Commission on Accreditation for Marriage and Family Therapy Education. The Child Study Center is accredited by the National Academy of Early Childhood Programs, a division of the National Association for the Education of Young Children.

For admission, a background in the social and behavioral sciences is highly desirable and should include course work in human development, family relations, anthropology, sociology, psychology and statistics. Students without adequate preparation in these areas may be accepted upon the condition that they register for any additional courses deemed necessary by the Department's graduate advisory committee. Applicants for admission to the Ph.D. program should hold a master's degree. Students who are admitted from a non-thesis master's program will be required to complete a directed research project. There is no language requirement for the M.S. or Ph.D. degrees.

The M.S. requires a minimum of 48 quarter hours, including at least 33 in the major field, a thesis and a final oral examination covering the thesis research and other fundamental work. A minor in an allied or supporting area of study is encouraged. Students interested in completing the four-quarter Marriage and Family Therapy Practicum are required to take and pass a clinical qualifying examination.

The Ph.D. program requires a minimum of 92 hours beyond the B.S. and consists of a theoretical and substantive emphasis in family and child relationships, a supporting emphasis that will provide a multidisciplinary understanding of children and families, a research and statistics component and an empirical dissertation.

Graduate research may focus on relationship studies at any stage of the life cycle, including parent-child, family, marital, non-marital, peer, friendship, family-child care-work and mentor-protege. Graduate assistantships are available to students who have achieved superior rank in their previous academic work.

Industrial Design — M.I.D.

The department offers the Master of Industrial Design, which requires a thesis. The applicant must have a bachelor's degree in industrial design or its equivalent from an institution of recognized standing. Applicants with a baccalaureate from other disciplines such as engineering, management, psychology, architecture and life sciences, may be admitted to the graduate program under condition that a minimum of 45 credit hours in industrial design will be completed at the undergraduate level. Normally, students are admitted to the 45 credit hour undergraduate program during the Summer Quarter. All DSN Graduate Students are required to take DSN 200.

A major of 52 credit hours, including the thesis, is required. Credit for DSN 699 may not exceed seven hours. Courses are structured to the specific product and systems design area of the student's interest. In certain cases, additional course work beyond the minimum may be needed. There is no language requirement. Normally, students will be admitted to the program only during fall quarter. A graduate-level core curriculum is required.

Industrial and Systems Engineering — M.S., M.I.S.E., Ph.D.

The department offers the Master of Industrial and Systems Engineering, the Master of Science and the Doctor of Philosophy. These programs are for students with undergraduate degrees in industrial engineering, other engineering disciplines, mathematics and science.

All applicants must submit Graduate Record Examination scores for the General Test.

Both the M.I.S.E. and M.S. programs require 45 hours of course work.

The M.I.S.E. is oriented toward professional practice. M.I.S.E. students must take 18 quarter hours from a set of core courses; a three quarter-hour design project and 24 quarter hours in one of four tracks: engineering management, ergonomics and safety, operations research and statistics, or production and manufacturing. The remaining 27 hours may be taken from the approved course list for each track. The M.S. requires an industrial and systems engineering major of at least 33 hours, including thesis credit and a minor of 12 hours. Both programs require at least 23 hours of 600-level courses. Neither has a language requirement.

Research involvement is the dominant element in the doctoral program. It provides a quality educational experience for selected individuals whose records indicate an excellent potential not only for superior performance in the course work, but also for the research and ensuing dissertation that stand as an original and scholarly contribution to the field. The Ph.D. program does not require specific courses or a foreign language, but the student must demonstrate a high level of proficiency in some area of study and general competence in the field of industrial and systems engineering. A qualifying examination is required. The degree usually requires one calendar year of course work and another of research beyond the master's degree. A minor in a closely related field is required.

Large Animal Surgery and Medicine — M.S., Ph.D.

The department offers the Master of Science and participates in the Doctor of Philosophy program in the College of Veterinary Medicine.

The departmental M.S. program requires a minimum of 45 quarter hours, of which at least 30 quarter hours must be in a major area of concentration. With approval of the student's advisory committee, course work may be selected within the department or in a separate but related area.

Students must hold the degree of D.V.M. or its equivalent from a school accredited by the American Veterinary Medical Association. The plan of study will be determined by the student and the student's advisory committee. Candidates may be required to pass preliminary oral and/or written examinations to demonstrate adequate knowledge in the chosen fields.

There is no language requirement.

The Ph.D. is offered through the interdepartmental doctoral program in Biomedical Sciences.

Management — M.S., M.M.I.S., Ph.D.

The department offers graduate study leading to the Master of Science, Master of Management Information Systems and the Doctor of Philosophy degrees in management. Applicants to each program must hold a bachelor's degree from a recognized institution. Additionally, students must complete a common body of knowledge curriculum comprising core courses in business. Graduates of business schools will likely have met this requirement; graduates of other programs may be required to complete additional courses to compensate for deficiencies.

The M.S. program offers specialized training to graduate students selecting a major in human resources management. The program permits students to develop the necessary organizational and technical skills for managerial and/or staff positions in both profit and non-profit organizations. Requirements of the M. S. program are two-fold: completion of a minimum of 45 quarter hours selected by the student in conjunction with an advisory committee and a thesis on a topic chosen by the student and approved by the committee.

The M.M.I.S. Program offers advanced preparation for graduate students in Management Information Systems. This is a non-thesis program that requires the completion of a minimum of 50 quarter hours selected by the student and advisory committee and the completion of a project chosen by the student and approved by the committee.

The Ph.D. program prepares graduates to conduct high-quality research in universities, colleges, government and business. Doctoral students choose one of three areas of concentration: human resources management, organizational analysis and change or management information systems. Individual flexibility is provided in a program of study that develops the conceptual and methodological skills that graduates need to begin work toward a leadership position in their chosen fields. Objectives of the program are accomplished through a formal program of study, teaching and research assistantships, assignment and completion of research projects, preparation for and completion of preliminary examinations and dissertation research.

Marketing and Transportation — M.S.

The department offers graduate course work in support of the Master of Business Administration. Additionally, the department offers a marketing concentration in the Master of Science in

Business Administration. Students wishing to major in marketing within the M.B.A. degree may do so by selecting 14-15 hours of approved marketing electives. This concentration is administered by the college's M.B.A. director and requires no departmental approval.

The M.S.B.A. in Marketing and Physical Distribution is a thesis degree program for students seeking professional training in Marketing and Physical Distribution beyond the undergraduate level. Students must have completed the "common body" course work by obtaining an A.A.C.S.B.-accredited undergraduate business degree or by taking specialized preparatory courses before taking advanced courses. The degree requirements are flexible and depend on the program of study devised by the student in conjunction with the student's advisory committee.

Materials Engineering — M.Mt.E., M.S., Ph.D.

Materials engineering offers graduate programs of instruction and research leading to the degrees of Master of Materials Engineering, Master of Science and Doctor of Philosophy. All applicants must submit Graduate Record Examination scores for the General Test. Students completing all degree programs are expected to have knowledge in the following areas: mechanical properties; materials structure; materials thermodynamics; kinetics; and electrical, optical and magnetic properties of materials. There is no foreign language or minor requirements for all degrees.

The M.Mt.E. is intended for those who expect to enter the engineering profession at an advanced level or are practicing engineers wishing to gain additional fundamental knowledge in the field of materials. Emphasis is on professional development. Those students lacking the necessary background may be required to take additional work. The requirements for the degree are 48 credit hours including a final engineering report. The topic of the report will be agreed upon by the student and the advisory committee. Applicants must have a baccalaureate degree in engineering or science from an institution of recognized standing. Students must pass qualifying oral examinations prior to taking the final general comprehensive examination required by the Graduate School.

The M.S. is intended for those who seek advanced knowledge in materials science or engineering for a career in research or other professional practice. The applicant must have a baccalaureate degree or its equivalent in an engineering or scientific discipline from an institution of recognized standing. Those lacking the necessary background will be required to take additional work to ensure the continuity of their educational and professional experience. The M.S. program consists of 45 credit hours selected from areas of study appropriate to the objectives of the applicant and includes a thesis. Students must pass qualifying oral examinations prior to taking the final comprehensive examination required by the Graduate School.

The Ph.D. program requires that students pass qualifying oral examinations with a greater proficiency than master's students prior to taking the comprehensive examinations. The program, arranged on an individual basis, will consist of a minimum of 92 credit hours, including dissertation, beyond the B.S. degree with at least 46 hours of 600-level courses with 30 hours as a Ph.D. student at Auburn University. In addition, of these 46 hours, 36 must be Materials courses not including the five core courses covering the areas outlined above. Students admitted to the doctoral program are required to take the general comprehensive examination within two years after entering the program. The student should be prepared to be examined in all areas of materials engineering.

Mathematics — M.S., M.A.M., Ph.D.

The department offers programs leading to the Master of Science and Doctor of Philosophy in pure and applied mathematics and the non-thesis Master of Applied Mathematics. Actuarial science courses which cover the material in the first 10 actuarial exams are regularly taught.

The internationally known faculty works in areas of algebra, analysis, geometry, linear algebra, logic, numerical analysis, probability, set theory and topology. Many faculty maintain applied research programs associated with several government and industrial laboratories. One faculty member holds the Associate of the Society of Actuaries designation.

Admission to the program is based on a student's undergraduate record, letters of recommendation from former teachers, GRE scores and graduate GPA (for doctoral students). The GRE subject test is recommended but not required. A bachelor's degree in mathematics is not required, but new students are expected to have had rigorous courses in analysis and algebra. Some students who have not had these courses but otherwise are highly qualified are admitted with the understanding that they will make up this work early in the program of study.

The department follows the guidelines for graduate degrees set forth in this *Bulletin*. In

addition, doctoral students must satisfy a departmental preliminary examination requirement to continue their GTA.

Course work in mathematics may be transferred from other institutions, subject to university limitations.

Most students in the program are supported financially during their studies through Graduate Teaching Assistantships. The Baskervill Fellowship (\$3,000) is awarded two out of three years to a qualified student in the Department of Mathematics. The department occasionally has Graduate Research Assistantships in conjunction with departmental contractual research programs. The department also has a limited number of Tuition Fellowships.

The department requires that all international GTAs who have responsibility for teaching a class be proficient in English. A score of at least 50 on the Test of Spoken English is required.

Mechanical Engineering — M.S., M.M.E., Ph.D.

The Mechanical Engineering Department offers graduate programs of instruction and research leading to the degrees of Master of Mechanical Engineering, Master of Materials Engineering (see separate listing of graduate program in Materials Engineering), Master of Science and Doctor of Philosophy. Educational and research facilities are available to support graduate study in engineering mechanics, experimental mechanics, robotics, vibrations, dynamical systems and engineering design, engineering acoustics, manufacturing processes, computer-aided design, materials science and thermal sciences, including energy utilization. All applicants must submit Graduate Record Examination scores for the General Test.

Non-Thesis Option: The M.M.E. is intended for those who expect to enter the engineering profession at an advanced level. Emphasis is placed on professional development. Applicants are expected to have a baccalaureate degree in mechanical engineering from an accredited curriculum.

Requirements for the degree consist of a major of 30 credit hours as a minimum and a coordinated minor of 15 credit hours selected from areas of study appropriate to the applicant's objectives. There is a final comprehensive oral examination.

Thesis Option: The M.S. applicant must have a baccalaureate or its equivalent in an engineering or scientific discipline from an institute of recognized standing. The degree requires a major of 30 credit hours in mechanical engineering courses, including a thesis (seven credit hours) and a minor of 15 credit hours selected from allied areas of study. The minor may consist of a sequence of courses in mathematics, physics, or other related areas. All candidates must pass an oral defense of their thesis including a comprehensive examination covering the major and minor subjects.

Ph.D. students will select their major courses from those at the 600-level unless there are special requirements for more basic courses. The program, arranged on an individual basis, usually will consist of a minimum of one academic year of course work and one of research beyond the master's level. The student should prepare to be examined in all areas of mechanical engineering. The Ph.D. also requires a minor of at least 15 credit hours in a closely related field such as mathematics, physics, or other engineering disciplines.

The foreign language requirement, if any, is decided by the student's advisory committee as deemed appropriate. It may be French, German, or Russian. This requirement may be satisfied either by an examination administered by the Foreign Languages Department or by passing a two-quarter proficiency sequence in one of these languages. A minimum grade of **B** is required.

Music — M.Mu.

The Department of Music offers graduate studies leading to the Master of Music degree. A bachelor's degree in music, music education, or the equivalent from a recognized institution is required. To be admitted to the program, all candidates must successfully complete entrance examinations in music theory, history and literature. Music Performance majors must present a recital-length program during which the applicant must demonstrate the musical maturity and technical achievement necessary for graduate study. (Potential students should contact the Music Department for the specific repertoire requirements for this audition.) Choral Conducting majors must demonstrate a basic knowledge of choral literature and conducting skills as determined through an interview process.

Students will plan a course of study under the guidance of a Graduate Committee which consists of members of the Music Department faculty. The minimum number of graduate credits for the Master of Music Degree is 48.

Before graduation, students must present a Qualifying Recital (MU 697). This public per-

formance is attended by the student's Graduate Committee, which must approve its successful completion. In addition, Choral Conducting majors prepare a recital-related document that must be completed by the time of the Qualifying Recital. Successful completion of a Comprehensive Examination also is a requirement for graduation. This is an oral examination, which will be administered within the time frame of the Graduate School calendar and attended by members of the student's Graduate Committee. While the examination is directly involved with questions concerning the recital content, it will invariably examine the student's knowledge of music history, theory, form and literature. During this examination, students will be expected to demonstrate a mature understanding of these subjects.

Nutrition and Food Science — M.S., M.A.C.T., Ph.D.

The Department of Nutrition and Food Science offers graduate study leading to the Master of Science and the Doctor of Philosophy degrees with emphasis in either food science, nutrition, or hotel and restaurant management. The combination of these respective areas within a single department facilitates integrative studies addressing normal and clinical nutrition, food and health issues, food safety and technology and food service, as well as hospitality management. For the M.S. degree, the student may specialize in human, community, clinical or sports nutrition, food science, or hotel and restaurant management. The department emphasizes the integration of knowledge from various fields for the purpose of understanding and developing professional skills for careers in higher education, government and food, healthcare and hospitality industries.

For admission to the M.S. or Ph.D. programs, the student must have a bachelor's degree from an accredited institution and a satisfactory GRE score. Applicants lacking background requirements in nutrition, food science or biological and physical sciences must make up deficiencies. The M.S. requires a minimum of 45 hours and a thesis. A non-thesis option is available in the HRM emphasis; this option is available through distance education and on campus. The Ph.D. requires a minimum of 92 hours beyond the B.S. degree and a dissertation describing original research in the area of nutrition or food science. Laboratories are available for human, animal, chemical and physical research.

Supporting courses to strengthen the nutrition or food science major may be in biochemistry, physiology, organic chemistry and biostatistics. The HRM emphasis may take supporting courses in management, marketing, communications and economics. Course requirements for membership or registration in the American Dietetic Association may be met during the graduate program by enrolling in additional required courses. Teaching, research and extension assistantships are awarded competitively to qualified students.

Pathobiology — M.S., Ph.D.

The Department of Pathobiology offers graduate study in microbiology, molecular biology, immunology, epidemiology, parasitology and pathology leading to the degrees of Master of Science and Doctor of Philosophy, the latter an interdepartmental program in Biomedical Sciences in the College of Veterinary Medicine. Degree programs in pathology are combined with residency training. Pathobiology also participates, along with other units, in several areas of special programmatic emphasis: a University-wide M.S. degree program in Environmental Studies; intercollegiate emphasis in cellular and molecular biology and animal biotechnology; in conjunction with the C.S. Roberts Veterinary Diagnostic Laboratory for poultry pathology; and in conjunction with the Department of Fisheries and Allied Aquacultures for aquatic pathobiology. A student's program of study is designed to meet the student's needs and interests while featuring research training and assuring a strong background in biochemistry, immunology and molecular biology. Original research and a scholarly thesis or dissertation are required. Areas for thesis or dissertation research include molecular virology of herpesviruses; virulence of bacterial pathogens; cellular immunology; studies of protozoa and helminths; reproductive biology, including in vitro fertilization; molecular genetics of cell cycle and growth regulation; epidemiology and pathogenesis of infectious diseases; molecular genetics of inherited metabolic diseases; molecular probes and monoclonal antibodies for disease diagnosis; cancer biology and immunology; platelet pathophysiology; and a variety of topics in cell pathology. Individual initiative and close contact between students and faculty are emphasized. Special enrichments include seminars and journal clubs, training in grant writing, participation in scientific meetings and opportunities to gain teaching experience. Financial aid is provided in the form of graduate research assistantships.

Programmatic strengths include strong interactions among disciplines and effective multidisciplinary research programs. Included among a broad range of laboratory and sup-

port facilities available to the student are hybridoma, molecular genetics, electron microscopy and flow cytometry laboratories and facilities for cell culture and gnotobiotic research.

The Doctor of Veterinary Medicine degree or equivalent is required for admission into a graduate program in pathology. For the other departmental disciplines, individuals with appropriate backgrounds in the biological sciences, chemistry, or veterinary medicine are eligible. Applicants must submit satisfactory scores on the Graduate Record Examinations General Test. Proficiency in a foreign language is not required. M.S. programs are offered only under the thesis option.

The Ph.D. is offered through the interdepartmental doctoral program in Biomedical Sciences.

Pharmaceutical Sciences — M.S., Ph.D.

Graduate study in pharmaceutical sciences leads to the degree of Master of Science. In addition, a Doctor of Philosophy in pharmaceutical sciences is offered through an interdepartmental program (PYS) by the Departments of Pharmaceutical Sciences and Pharmacy Care Systems.

The graduate program prepares students for teaching or research careers in academia, the pharmaceutical industry and public and private research institutes. Students are expected to select one of the following areas of specialization: pharmaceutics, medicinal chemistry and pharmacology and toxicology.

For the M.S. program, students must have a bachelor's degree in pharmacy or an allied discipline such as biology, zoology, physiology, chemistry, physics, psychology. Requirements include completion of 30 quarter hours of didactic study, a thesis, and an additional 15 quarter hours to be selected from allied disciplines of the pharmaceutical sciences.

For the Ph.D. program, applicants must have a bachelor's or master's degree in pharmacy or an allied discipline. In addition, applicants must have adequate Graduate Record Examination scores. Students are expected to select a major area from one of the three disciplines in the pharmaceutical sciences. A minor should be selected from a related area within pharmaceutical sciences or from an allied discipline offering Ph.D.-level education.

A dissertation is required of all graduates of the Ph.D. program. There is no language requirement. The Ph.D. requires competence in biostatistics or in the use of computers.

Pharmacy Care Systems — M.S., Ph.D.

The department offers graduate course work at the master's and doctoral level in the fields of pharmacy care systems and hospital pharmacy. The Doctor of Philosophy in pharmaceutical sciences may be earned in pharmacy care systems.

The student pursuing the M.S. is expected to select either pharmacy care systems or hospital pharmacy. At least half of the student's work will be completed in the chosen field, including a thesis. The remainder may be selected in other pharmacy fields or may be taken in a related area outside of the School of Pharmacy such as accounting and finance, computer sciences, economics, industrial engineering, industrial design, architecture, management, psychology, sociology and communication. The M.S. requires a minimum of 45 quarter hours and a thesis. The thesis may be counted toward part of the quarter hour requirement. A student may earn a maximum of seven credit hours for the thesis.

The student pursuing the Ph.D. will be expected to complete 80-100 hours of course work in the chosen field of study. In addition, general examinations and a dissertation are required. A student must earn a minimum of 15 hours credit for the dissertation.

A bachelor's degree from an accredited college or university and satisfactory scores on the Graduate Record Examination are required. A pharmacy degree is preferred. There is no language requirement.

Physics — M.S., Ph.D.

The Department of Physics offers the Doctor of Philosophy and the Master of Science with or without a research thesis. All applicants must take the Graduate Record Examination General Test.

At the master's degree level, the fundamental subject matter of graduate studies begins with the courses PS 601-602-603 (Advanced Dynamics), PS 604-605-606 (Theory of Electricity and Magnetism), PS 628-629-630 (Statistical Mechanics) and PS 641-642-643 (Quantum Mechanics). For a non-thesis masters degree, a student must satisfactorily complete a minimum of two quarters in each of the four or in three out of four for a masters with thesis.

The Doctor of Philosophy degree is conferred only upon students who have shown clear evidence of high academic achievement as well as the ability to conduct original research. A

dissertation embodying the results of the candidate's original research represents an important part of the requirements for this degree.

The examination for the Ph.D. is comprehensive and consists of written and oral parts. It is administered annually at the start of the fall quarter. Students are expected to take the qualifying examination two years after entering graduate study. Those whose performance on the examination is unsatisfactory will be permitted to take it once more.

The major fields of research are plasma physics, condensed matter physics, atomic and molecular physics, mathematical physics, space physics and surface physics.

The Allison Physics Laboratory houses the advanced laboratories, including the Semiconductor Materials Laboratory and the Surface Science Laboratory. It also houses the seminar rooms, offices of staff and graduate students, research rooms and shops of the Physics Department. More than 20,000 square feet are devoted to the graduate research program. Research facilities housed in the Leach Science Center include a 3 MeV Dynamitron and the Compact Auburn Torsatron. Auburn University is one of the sponsoring institutions of Oak Ridge Associated Universities. Thesis work may be performed at the Oak Ridge National Laboratory or other qualified institutions.

Financial assistance is available through the Physics Department to students in the form of teaching assistantships, for which the recipient must assist in undergraduate lectures and laboratories. Research assistantships also are available. Information concerning these positions may be obtained by writing directly to the Physics Department, Attention: Chair, Graduate Admissions Committee (or from <http://www.physics.auburn.edu/>).

Physiology and Pharmacology — M.S., Ph.D.

The department offers both the M.S. and Ph.D. degrees for those majoring in physiology, pharmacology, or toxicology. Areas of special interest are endocrinology, reproductive physiology, neurosciences, metabolic regulation, enzymology, molecular and membrane physiology, clinical and applied pharmacology and toxicology.

Candidates must have a B.S. or a D.V.M. or equivalent from an accredited institution and a strong background in biology, chemistry, physics and mathematics.

The student must major in and conduct research in some aspect of physiology or pharmacology. The minor may consist of toxicology, biochemistry, biophysics, physiology, metabolism, pharmacology, anatomy, nutrition, psychology or other supporting fields.

The plan of study will be determined by the student and the student's advisory committee. Students deficient in chemistry, biology, physics, mathematics, or other basic sciences may be required to include these in the plan of study.

A dual degree program is available in this department that permits a veterinary student to begin research work while in the College of Veterinary Medicine. All of the requirements for the conventional M.S. and Ph.D. programs must be met.

The Ph.D. is offered through the interdepartmental doctoral program in Biomedical Sciences.

Plant Pathology — M.Ag., M.S., Ph.D.

Graduate study in plant pathology leads to the degrees of Master of Science and Doctor of Philosophy. The graduate program prepares students for careers in university, government and industry research, university teaching and extension, government service and careers in agribusiness.

Candidates for graduate study should have a bachelor's degree from an accredited institution with 30-35 hours of course work in one or more of the following areas: botany, microbiology, biology, zoology, chemistry, physics, agronomy, horticulture, or plant pathology. In addition, a satisfactory score on the Graduate Record Examination General Test is required. Students from non-English speaking countries should have a score of 560 or above on the Test of English as a Foreign Language.

For the M.S., 45 credit hours beyond a bachelor's must be taken, including a minimum of 30 hours of plant pathology courses and biostatistics, DMS 501, or its equivalent. Students are required to attend the departmental seminar, PLP 640, during their entire period of enrollment with registration for one hour for two quarters. The degree also requires a thesis and a minimum of 7 hours of PLP 699. For the Ph.D., 60 to 80 hours of plant pathology courses are generally taken and a minimum of 15 hours of PLP 799. Ph.D. candidates must attend the departmental seminar and enroll for one hour of PLP 740 for three quarters during their studies. One or more minors consisting of 20 to 40 hours may be taken from related fields,

including 10 hours of biostatistics, DMS 501 and 601, or their equivalent. Ph.D. candidates will be given an oral prescription examination between their second and third quarter of enrollment. Failure of this examination will disqualify the student from continuing study for a Ph.D. in the department. A student may receive a provisional pass in which case additional course work will be prescribed to compensate for deficiencies. The degree requires a dissertation.

There is no foreign language requirement for any of the degrees.

Political Science — M.A., M.A.C.T.

Applicants to the Master of Arts in Political Science program must have a bachelor's degree from an accredited college or university, a 2.5 GPA overall with a 3.0 average in political science carrying at least 18 semester to 30 quarter hours. Additionally, the quantitative and analytical portions of the Graduate Record Examination must be taken. A combined score of 900 is required. Assistantships are available and are awarded on a competitive basis. The department strongly suggests the GRE subject test in political science for applicants whose undergraduate degree is in political science.

For the M.A. in Political Science, students may select a thesis or non-thesis option. The thesis option is typically more useful for those going on for a Ph.D.; the non-thesis option is typically more useful for those with other plans. The thesis option requires 45 credit hours including a minimum of 38-40 hours in course work. It requires successful completion of the thesis and passing an oral examination covering both fields of study and the thesis. The non-thesis option requires 50 credit hours of course work and passing a written examination. All M.A. students must take PO 601 and at least three of the four core courses (PO 611, 645, 655, 665). Those in the non-thesis option must also take the fourth core course. Students in either option may take up to 10 hours of their required course work in other departments, up to five hours of their required course work at the 500-level and up to five hours of the required course work in reading courses. Students will be asked to select one of the two options by the end of their second quarter in residence.

Strengthened Subject Matter Option (SSMO)

Students holding an Alabama Class B Secondary Teaching Certificate will be issued a Class A certificate upon completing the requirements for the M.A. in addition, SSMO students are required to have earned undergraduate or graduate level credit for a course in evaluation of teaching and learning, a general survey course in exceptional child education, a course in the psychology of learning, or have passed the professional studies component of the Alabama State Board of Education-approved Initial Teacher Certification Test.

Poultry Science — M.S., M.Ag., Ph.D.

Graduate study in poultry science leads to the degrees of Master of Agriculture, Master of Science and Doctor of Philosophy. The graduate program prepares students for careers in teaching, research, business and industry.

Applicants for the M.S. degree must have a bachelor's degree from an institution of recognized standing. Applicants lacking course requirements must make up deficiencies in addition to taking required courses. A working knowledge of the following subjects is desirable, depending on major and minor selected: organic chemistry, genetics, microbiology, physiology, animal biology and poultry science. Students may select courses which enable them to specialize in poultry production and management, poultry nutrition, poultry breeding, poultry physiology, poultry diseases and parasites, poultry microbiology, poultry immunology, or poultry processing and food science.

Approved courses in other departments of the university can be accepted for credit in either the major or minor classification. The degree requires a minimum of 45 hours and a thesis.

The Master of Agriculture requires a minimum of 48 hours, 30 of which must be in the agricultural sciences. A thesis is not required. Generally, other requirements are the same as for the M.S.

Entry to the Ph.D. program requires an M.S. degree and a satisfactory GRE score. The student must take a minimum of 90 hours, plus PH 699 and PH 799, beyond the bachelor's degree and produce a dissertation based on original research. At least 61 hours must be in 600- and 700-level courses. Major areas of specialization include those listed under the M.S. program above. In lieu of foreign languages, candidates must develop proficiency in statistics and/or computer science.

Psychology — M.S., Ph.D.

Graduate study in psychology leads to the degrees of Master of Science and Doctor of Philosophy. The goals of the Department of Psychology are to prepare students at the doctoral level for careers in teaching, research and applied behavioral science. These goals are pursued through three specialized programs: clinical, experimental analysis of behavior and industrial/organizational.

Holders of the bachelor's degree in any discipline from an accredited institution will be considered for graduate work in psychology. In addition, the following preferred minimum standards are used to screen the large number of applicants for each year's openings: undergraduate GPA, 3.0 (on a 4.0 scale); psychology GPA, 3.25; graduate GPA, 3.25; and GRE General Test, 1100. The Admissions Committee also takes into account other information available from the application, such as research or applied experiences. Minority student applications are given special attention. To ensure consideration, departmental application and Graduate School application for admission should be completed by February 1.

During the first five quarters of study, students complete a fixed sequence of departmental core courses, including a sequence of proseminars (PG 681, 682, 683, 684 and 685), a sequence of methods courses (PG 625, 626, 627 and one optional course) and three additional courses (PG 601, 609 and 676). These courses provide a general foundation in psychology on which specialization in one of the department's three programs is based. In the course of doctoral study, students are expected to write an empirically-based master's thesis and defend it. The department does not offer a terminal master's degree.

The doctoral degree requires a general or preliminary examination. Admission to doctoral candidacy is contingent upon the successful completion of the preliminary examination. Finally, students must write and successfully defend a research dissertation. Students enrolled in the clinical specialty program must also complete a one-year internship.

There are no foreign language requirements.

Public Administration and Public Policy — M.P.A., Ph.D.

The Department of Political Science offers the Master of Public Administration. It is a professional degree program for leadership in public service at all levels of government. The program is accredited by the National Association of Schools of Public Affairs and Administration. Highly qualified students may pursue concurrently the Master of Community Planning through a special arrangement that includes a separate application.

Applicants for the MPA must have a bachelor's degree or its equivalent from an accredited college or university. The General Test of the Graduate Record Examination is required. The admissions committee will evaluate the undergraduate record, GRE scores, letters of recommendation, a writing sample and any experience in government. The program is not limited to political science majors, but successful applicants who have little background in government institutions and processes may be required to take additional courses.

The program requires 70 quarter hours, plus a comprehensive examination. Eight core courses for a total of 40 hours credit are required of all students. Students take an additional 20 hours of electives in either public administration, broadly conceived, or an approved concentration in a related administrative field or policy area. The final 10 credit hours consists of either an administrative internship in a governmental agency or participation in a governmental research project. Students without substantial governmental experience will complete an internship, while those who have prior experience will complete a research project and paper.

DEGREE REQUIREMENTS**A. Prerequisites****COMPETENCY**

English

Math

U.S. Government

Statistics

Micro computer applications

MEASURE

Verbal GRE of at least 500 and writing sample

Quantitative GRE of at least 500

Undergraduate course or experience

Undergraduate course

Undergraduate course or demonstrated competence

Students who have not satisfied these competencies before they enter the program may take them concurrently with MPA courses. It is important to complete the prerequisites as soon as possible to gain full benefit of the regular MPA courses.

B. The Core Curriculum

PO 552, 600, 614, 615, 626, 633, 635, 636. All classes are five hours.

C. Electives

The student must take 20 hours of electives chosen in consultation with the Director of the MPA Program. If the option for a dual degree with community planning is chosen, the electives for public administration will be fulfilled by the core courses of community planning. With the addition of the community planning core hours, the net result is 86 hours needed to graduate instead of 70.

D. The Practical Experience

The remaining ten hours of study required by the curriculum are fulfilled in one of two ways. Students without significant prior governmental experience take an internship. Students with direct government experience normally complete an approved research project, although they may take an internship with the approval of the MPA director.

E. Comprehensive Examination

The comprehensive examination is a critical part of the MPA program. The comprehensive exam will be offered twice a year – fall and spring. Students who fail the examination are allowed one opportunity to retake it at one of the regularly scheduled examination periods. Typically, the exam is taken during the last quarter of study. A committee of three faculty members prepares the exam from questions submitted by all faculty who teach core courses. The examination focuses on the following

1. Factual knowledge of basic institutions, processes and rules affecting public administration.
2. Understanding of the major theoretical concepts of the field.
3. Knowledge of major generalizations of the field.
4. Ability to integrate concepts and generalizations from various subfields and courses.

Ph.D. in Public Administration and Public Policy

The Ph.D. in Public Administration and Public Policy is offered jointly by the Auburn University Department of Political Science and the Auburn University at Montgomery Department of Political Science and Public Administration. The curriculum includes four core seminars and three specialty fields.

Only students with master's degrees from accredited universities or colleges will be considered for the AU and AUM Ph.D. program. Applicants having an insufficient background in public administration and public policy will have to take additional courses as determined by the admissions committee. All applicants must take the GRE. Normally, a combined score of 900 is required for admission

DEGREE REQUIREMENTS

A. Core Courses

All of the following core seminars must be taken: PA/PO 700, 702, 706, 708. Each class is five hours.

B. Specialization Fields

A student must take a minimum of two courses in each of three specialization fields. The core seminars cannot be used to count for the minimum of two. One field of specialization must be chosen from the following: Budgeting, Organizational theory, Personnel, Public administration, Public policy and Research methods.

The other two are selected by the student in consultation with the student's committee. They may be but need not be selected from this list.

C. Minimum Credit Requirements

Hours of formal Ph.D. course work: 65

Hours of 600/700 formal Ph.D. course work: 55

Minimum hours of formal course work at each campus: 15

D. Examinations

Upon completion of course work, students must take a written and oral examination administered by the advisory committee over their course work. For the written part, there will be one general examination covering all four of the core areas and separate examinations on each of the student's individual specialty areas. Students must pass each written examination before scheduling the oral examination. After completion of the dissertation the student must pass a final oral examination which is principally a defense of the dissertation.

Radiology — M.S., Ph.D.

Satisfactory work on a graduate level in medical sciences requires a strong foundation in the biological and physical sciences. Therefore, the candidate for the Master of Science degree in veterinary radiology is encouraged to elect early in the program of study additional courses in certain fundamental sciences, biometry, surgery and medicine. The nature of the research problem largely will determine the time necessary for the completion of the requirements for the master's degree, but in most instances it is anticipated that the student may require somewhat more time than the minimum required by the Graduate School.

Graduate study in veterinary radiology requires at least 40 months. The Master of Science and Doctor of Philosophy are available. The M.S. is offered in the Department of Radiology. The Ph.D. is an interdepartmental degree (Biomedical Sciences, BMS) in the College of Veterinary Medicine. After the 40-month residency program, the individual will be qualified to write the certification examination in veterinary radiology administered by the American College of Veterinary Radiology.

Veterinary radiology is a well-developed sub-specialty in veterinary medicine and, as such, is recognized by the American Veterinary Medical Association. Increasing complexity of radiology, particularly in the field of special diagnostic procedures, radiotherapy, nuclear medicine, ultrasound and alternate imaging requires in-depth training to provide the expertise needed by the clinical discipline and academic research.

The Radiology Residency Program provides a degree and post-graduate training in the radiological sciences requiring at least three years following a formal internship or equivalent experience. The program is approved by the American College of Veterinary Radiology. An individual, upon completion of this program, satisfies the requirements of the American College of Veterinary Radiology and will be eligible to apply for the qualifying examination.

The program provides broad training in routine and special procedures, diagnostic large and small animal radiology and to give experience in all forms of radiation therapy as well as nuclear medicine, ultrasound, radiation biology and alternate imaging. Investigative techniques used in experimental radiology also will be studied. Graduates of the program should be equipped to function in an academic environment, industry, or in a private specialty practice.

The program utilizes the facilities and faculties of the College of Veterinary Medicine, the University of Alabama Medical School at Birmingham, the Leach Science Center, Oak Ridge Associated Universities and the East Alabama Medical Center, Opelika. A resident also is exposed, philosophically, to other academic veterinary radiology departments such as the University of Georgia, the University of Tennessee, the University of Florida, North Carolina State University and Mississippi State University.

A graduate major of at least 30 quarter hours may be earned in medicine, surgery, or radiology. A graduate minor of at least 15 quarter hours may be earned in anatomy and histology, bacteriology, parasitology, pathology and physiology, or other fields that are related to the major fields.

A student desiring to become a candidate for the M.S. with a major in medicine, surgery, or radiology must hold the degree of Doctor of Veterinary Medicine or its equivalent.

Courses designated by an asterisk (*) are available to students who hold the D.V.M. degree. Interdepartmental courses in medicine and surgery, physiology and pathobiology also will be required in the residency program.

The Ph.D. is offered through the interdepartmental doctoral program in Biomedical Sciences.

Rehabilitation and Special Education — M.Ed., M.S., Ed.S., Ph.D.

Graduate study in Rehabilitation and Special Education leads to the degrees of Master of Education, Master of Science, Specialist in Education and the Doctor of Philosophy. Sixth-year certification (AA) is available in several areas and Fifth-Year Programs for non-education undergraduate majors are available in early childhood special education, emotional conflict/behavior disorders, learning disabilities and mental retardation.

Students pursuing a master's degree in a special education program area are required to complete a minimum of 48 quarter hours. Completion of the program meets the requirement for "A"-level certification in Alabama. The master's in rehabilitation requires a minimum of 72 quarter hours and completion of a thesis. Students may select a thesis (M.S.) or non-thesis (M.Ed.) option for any of the master's degree programs in special education programs. Areas of specialization include early childhood special education (RSC), emotional conflict/behavior disorders (RSB), learning disabilities (RSL), mental retardation (RSM), mild learning handicapped (RSX), multi-handicapped (RSH) and rehabilitation services (PSR).

The Specialist in Education degree requires a minimum of 48 quarter hours beyond the master's degree and consists of a major field and supporting course work.

The Ph.D. program is offered in rehabilitation and special education. Students are required to take 20 quarter hours of research courses and 12 hours of educational foundations (historical, psychological, philosophical, sociological, etc.). The remainder is made up of RSE doctoral core and support-area course work. A minimum of 120 hours beyond the bachelor's degree, excluding the dissertation hours requirement, is needed to complete the program.

Admission to the master's degree program is based on undergraduate GPA and the gen-

eral test of the Graduate Record Examination. Doctoral admission requires a personal interview in addition to the GPA and GRE general score requirements. Contact the department for additional requirements.

The asterisk (*) denotes that certain sections of the following common offerings are identified by use of letter designations as follows: (L) Learning Disabilities, (N) Speech Pathology, (B) Emotional Disturbance, (M) Mental Retardation, (Q) General Rehabilitation and Special Education, (R) Rehabilitation, (C) Early Childhood Education for the Disabled, (H) Multihandicapped and (X) Mild Learning Handicapped.

Small Animal Surgery and Medicine — M.S., Ph.D.

Satisfactory work on the graduate level in the medical sciences requires a strong foundation in the biological and physical sciences. The candidate for the Master of Science in veterinary medicine is encouraged to elect early in the program of study additional courses in certain fundamental sciences. The nature of the research program largely will determine the time necessary for completion of the requirements for the master's degree, but in most instances it is anticipated that the student may require somewhat more time than the minimum required by the Graduate School.

A graduate major of at least 30 quarter hours may be earned in medicine, surgery, or radiology. A graduate minor of approximately 15 quarter hours may be earned in anatomy and histology, bacteriology, parasitology, pathology and physiology or other fields that are related to the major fields, for a total of 45 credit hours. Exposure to clinical cases is not a part of the graduate program.

A student desiring to become a candidate for the M.S. with a major in medicine or surgery must hold the degree of Doctor of Veterinary Medicine or the equivalent.

Candidates for a master's degree in the College of Veterinary Medicine may be required to pass a preliminary oral or written examination to demonstrate adequate knowledge in their chosen fields.

The Ph.D. is offered through the interdepartmental doctoral program in Biomedical Sciences.

Spanish — M.A., M.H.S.

Graduate study in Spanish leads to the Master of Arts (M.A.), the Master of Hispanic Studies (M.H.S.) and the Master of Arts in College Teaching (M.A.C.T.). The graduate programs are designed to prepare students for careers in teaching, business, government, Latin American affairs, diplomacy, social service and law enforcement and for doctoral studies in Spanish, Spanish American literatures, Hispanic linguistics and foreign language education.

Candidates wishing to pursue the master's degree in Spanish must have a four-year undergraduate degree from an accredited institution, with at least 45 quarter hours of Spanish above the first-year level, or the equivalent. Candidates also are expected to have a high GPA and satisfactory scores on the Graduate Record Examination. International students also must fulfill all the above plus an acceptable TOEFL score. Applicants lacking the 45 quarter hour requirement of undergraduate Spanish courses are expected to eliminate this deficiency.

An M.A. requires 40 quarter hours plus six hours for the thesis. The M.H.S. requires 54 quarter hours and the M.A.C.T. 48 quarter hours, including eight hours of education courses. Neither requires a thesis. All the programs require passage of a comprehensive examination.

For the M.H.S., candidates must earn a minimum of 44 quarter hours in Spanish. A minor consisting of up to 10 additional quarter hours of graduate-level courses in a related field or fields may be earned.

All master's degree candidates who are graduate teaching assistants are required to take SP 692 every quarter when they hold a teaching assistantship. Credit for this course does not count toward the degree.

A reading knowledge of an additional foreign language is required. This knowledge may be demonstrated by the departmental examination, by a two-quarter Foreign Language Proficiency course, or by completion of the first-year sequence or equivalent of a foreign language with a grade of **B** or better in each course.

For more information, please request from the Graduate Director a copy of the Handbook for Graduate Students in Spanish.

Statistics — (See Discrete and Statistical Sciences)

Vocational and Adult Education — M.Ed., M.S., Ed.S., Ed.D.

The graduate programs in vocational and adult education prepare students for careers in teaching, administration, extension service, training and development and other professional positions in public and private education, business, industry and governmental agencies. Graduate study in vocational and adult education leads to the degrees of Master of Education or the non-traditional (fifth year) master's (M.Ed.), Master of Science (M.S.), Specialist in Education (Ed.S.) and Doctor of Education (Ed.D.). Areas of specialization include: adult education (VAD), agribusiness (VAG), business education (VBU), marketing education (VMK) and trade and industrial education (VTI). Graduate study may be taken with emphasis in vocational administration.

Those seeking full admission to the graduate program must have a bachelor's or master's degree with satisfactory GPAs from an accredited college or university and must submit GRE scores for verbal and quantitative subtests. (These requirements must also be met for the thesis or non-thesis master's options.) A plan of study is required for all graduate programs. A residency requirement must be fulfilled for the doctoral program and the thesis-option master's. A comprehensive written and oral examination is required in all program areas.

The Master of Education requires a minimum of 48 quarter hours in an approved program of study and includes three components: Foundations of Education, eight quarter hours; Area of Specialization, 32 quarter hours; and Approved Electives, eight quarter hours. The Master of Science requires a minimum of 45 quarter hours of credit, a thesis and includes two components: Foundations of Education, eight quarter hours; and an Area of Specialization, including a thesis, 37 quarter hours.

The non-traditional (fifth-year) master's program for teacher certification is available for individuals who have not completed requirements for certification to teach. Completion of a fifth-year program may lead to a Master of Education degree (M.Ed.) and equivalent Alabama Class A certification. Participants must have a 2.5 GPA on college course work attempted and meet the requirements for admission to the College of Education's Teacher Education Program as stated in the undergraduate *Bulletin*. In addition, applicants may be required to make up deficiency in course or program requirements before formal admission. The non-traditional master's program requires a minimum of 64 quarter hours in an approved program of study.

The Specialist in Education degree program (Ed.S.) requires a minimum of 48 quarter hours of credit beyond the master's degree and typically results in Alabama AA teacher certification. A research project and a GPA of 3.0 on a 4.0 scale (3.25 GPA for Alabama AA teacher certification) on all courses beyond the master's degree are required.

The doctoral program (Ed.D.) requires a minimum of 120 quarter hours of approved credit beyond the bachelor's degree, excluding 12 hours of dissertation and 10 hours of seminars for alternative residency. Courses required include: research methods and statistics, 12 hours; foundations of education, 12 hours; and 96 hours divided between specialization courses and support courses in addition to a dissertation. Alternative residency is available. There is no language requirement. Applicants are required to present evidence of recognized ability and leadership potential demonstrated by at least three years of appropriate experiences. The student may take courses with a major emphasis in adult education, vocational education or a combination. Upon completion of course work, written examination and the general oral examination, the student must complete all requirements for the degree in four calendar years. If AA certification is desired as a part of the doctorate, these requirements should be included in the doctoral plan of study.

Zoology and Wildlife Science — M.S., M.A.C.T., M.Z.S., Ph.D.

Graduate education in zoology and wildlife science emphasizes rigorous academic and research endeavors in the basic life sciences, field zoology and wildlife science. The facilities of the Alabama Agricultural Experiment Station are used in both teaching and research. A Cooperative Wildlife and Fishery Research Unit is located within the Department and its facilities and personnel are an integral part of the program. Departmental facilities are housed in Funchess Hall, the Physiology Building, Cary Hall, the Herpetology/Paleontology Lab and greenhouses. Certain facilities of the Dauphin Island Sea Lab also are available.

Students desiring graduate training in zoology or wildlife should have a degree from a recognized institution with adequate training in zoology, botany, chemistry, physics and mathematics. Qualified students lacking prerequisite subjects may be admitted but will be required by the departmental advisory committee to make up the prerequisites without credit.

For the M.S. degree, at least 30 hours may be taken in zoology or wildlife. An additional 15 hours may be selected from one of the divisions within the department or from related subject

matter fields. For the Ph.D. degree in zoology or wildlife, approximately 60 to 80 hours or more, exclusive of research and dissertation, may be taken from subject matter emphasizing zoology or wildlife. Both the M.S. and the Ph.D. are earned under the thesis or dissertation option.

In addition, the department offers the Master of Arts in College Teaching (M.A.C.T.) and the Master of Zoological Studies (M.Z.S.). The M.A.C.T. is a non-thesis degree offered especially to train teachers for community and junior colleges. The M.Z.S. is a non-thesis degree designed to give the student an in-depth academic course work background in zoological sciences.

There is no foreign language requirement for the M.S., M.A.C.T. or M.Z.S. degrees. However, there is a foreign language requirement for the Ph.D. Prospective students should contact the department head relative to this requirement.

Interdepartmental

Biomedical Sciences — Ph.D.

All graduate faculty of the College of Veterinary Medicine participate in a college-wide graduate program leading to the Doctor of Philosophy degree in Biomedical Sciences. A Graduate Program Committee appointed by the Dean of the Graduate School, as recommended by the Dean of the College of Veterinary Medicine, supervises the program.

Applicants to the program are required to meet entrance standards established by the College Graduate Program Committee and the Graduate School, and may be required to have additional qualifications suitable for doctoral studies in their intended area of study. A baccalaureate degree or the Doctor of Veterinary Medicine (D.V.M.) degree, or equivalent, is required for admission.

A graduate student advisory committee is appointed by the Dean of the Graduate School for each student upon recommendation of the College Graduate Program Committee. The student's faculty advisor usually serves as the chair of this committee, and the remaining members, selected from the graduate faculty, should have expertise relevant to the student's area of study. The student should meet during the first quarter with the advisory committee to develop a plan of study which must be submitted to the College Graduate Program Committee for approval and then to the Dean of the Graduate School. The plan of study must include graduate courses offered within and/or outside the College of Veterinary Medicine. Courses must be selected in conformity with the regulations of the College Graduate Program Committee and the Graduate School. A major must be selected from various disciplines in biomedical science. A minor may be selected from a related area which can be expected to contribute to the student's academic needs and scientific interests.

Economics — Ph.D.

This is an interdepartmental program administered through the Department of Agricultural Economics and Rural Sociology, the Department of Economics and the School of Forestry.

Pharmaceutical Sciences — Ph.D.

The graduate program in pharmaceutical sciences offers the terminal degree of Doctor of Philosophy. The primary purpose of the program is to establish a functionally integrated research degree program leading to the Doctor of Philosophy with a major in the pharmaceutical sciences and specialization in the following disciplines: medicinal chemistry, pharmaceuticals, pharmacology-toxicology and pharmacy care systems. The interdepartmental program is administered jointly through the departments of Pharmacal Sciences and Pharmacy Care Systems.

Sociology — M.A.C.T., M.S., M.A.

The interdepartmental graduate program in Sociology offers study and research leading to the degrees of Master of Arts, Master of Science and Master of Arts in College Teaching. Anthropologists, rural sociologists and sociologists make up the faculty. The program is administered by a five-member coordinating committee from the Department of Agricultural Economics and Rural Sociology and the Department of Sociology.

Students admitted to the program are required to complete SOC 620, 630, RSY 670 and a thesis. The remainder of course work is elective but must be determined in consultation with the student's advisor.

Textile Science — M.S.

A Joint Master of Science in Textile Science is available through the departments of Textile Engineering and Consumer Affairs. The program offers course work (see also the listing for the Department of Consumer Affairs) and research ranging from textile science and engineering to consumer utilization of textiles and apparel. Major areas of study include advanced textile materials science, textile composites, geotextiles, textile statistical process control, technology of manufacturing and chemistry. Minors can be chosen to take advantage of the unique breadth of the program. Graduates will be prepared for careers in the textile and allied industries such as fiber, fabric and composite producers, chemical companies, apparel manufacturers and retailers or for further graduate study.

The student must have a bachelor's degree in textiles, engineering or a physical or chemical science and satisfactory Graduate Record Examination scores.

The M.S. requires 45 quarter hours and a thesis. A core of 22 to 28 hours, including thesis, is selected from an approved list of courses which give a breadth of knowledge relevant to textiles. Additional courses are selected consistent with the research interest for the degree.

Graduate Minors**Biochemistry and Cell/Molecular Biology**

The Graduate School, in cooperation with participating faculty and departments listed below, offers an academic minor in Biochemistry and Cell/Molecular Biology (BCM). The minor is open to M.S. and Ph.D. students whose thesis or dissertation research will benefit from a broader and enriched perspective in the fundamentals and applications of biochemistry, cell and molecular biology. For more information students should contact any of the following department coordinators: Dr. John Aull, Chemistry; Dr. Ajay Banga, Pharmacal Sciences; Dr. Curtis Bird, Pathobiology; Dr. Rex Dunham, Fisheries and Allied Aquacultures; Dr. Sandra Ewald, Poultry Science; Dr. Bruce Gladden, Health and Human Performance; Dr. Clint Lothrop, Scott-Ritchey; Dr. Ed Morrison, Anatomy and Histology; Dr. Anthony Moss, Zoology and Wildlife Science; Dr. Michael Payne, Animal and Dairy Sciences; Dr. Dean Schwartz, Physiology and Pharmacology.

Ecology

Ecology is an academic minor administered by the Graduate School in cooperation with faculty and departments that participate in the Auburn Group in Ecology. These are listed below. The Ecology minor is open to graduate students whose thesis or dissertation research will benefit from a broader and enriched perspective in the fundamentals and applications of the ecological sciences. For more information, students should contact any of the following department coordinators.

Agronomy and Soils	Wes Wood	Funchess 202
Botany and Microbiology	Bob Boyd	Rouse 26
Entomology	Jim Cane	Funchess 345
Fisheries and Allied Aquacultures	Dennis DeVries	Swingle 203B
Forestry	Mike Golden	M. White Smith
Plant Pathology	Kira Bowen	Rouse 224
Zoology and Wildlife	Craig Guyer	Funchess 333

Environmental Studies

This is an interdisciplinary academic minor administered by the Graduate School in cooperation with participating departments. It is open to any graduate student whose thesis or dissertation is in the environmental area. Participating departments include Aerospace Engineering, Agricultural Economics, Agricultural Engineering, Agronomy and Soils, Animal and Dairy Sciences, Architecture, Botany & Microbiology, Chemical Engineering, Civil Engineering, Entomology, Fisheries & Allied Aquacultures, Forestry, Geography, Geology, Horticulture, Landscape Architecture, Pathobiology, Pharmacal Sciences, Physiology & Pharmacology, Plant Pathology, Psychology, Sociology and Zoology & Wildlife Science.

Basic guidelines are:

- The minor is open to any graduate student whose thesis or dissertation is environmentally oriented.
- The student's department retains primary control over the student's program.

- One committee member must be from outside the student's department and this member must be involved in environmental research.
- Each student must take ZY 306, or the equivalent and RSY 565 (Natural Resources and the Environment) or GY 507 (Global Resources and the Environment).
- Each student must take four to five hours of environmental-related course work from outside of the student's "broad group discipline."
- Each student must take four to five hours of environmental-related course work from outside of the student's home department but within the student's "broad group discipline."
- Each student must meet the degree requirements of the student's home department.
- At the discretion of the student's advisory committee, graduate-level courses required for this program also may be counted towards the completion of other degree requirements.

For more information, contact Dr. Joe Touchton, Department of Agronomy and Soils, 202 Funchess Hall.

Plant Molecular Biology

Auburn University offers an academic minor in Plant Molecular Biology administered by the Graduate School in cooperation with the participating Molecular and Cellular Biology faculty housed in the three departments listed below. The minor is open to graduate students enrolled in these departments whose thesis/dissertation research addresses related studies and who will benefit from broader training in molecular biology. For more information, contact the following department coordinators: Botany and Microbiology – Brent Nielsen, Rouse 101; Horticulture – Floyd Woods, Funchess 101; Plant Pathology – Sadik Tuzun, Rouse 209

Urban Forestry

The Department of Horticulture and the School of Forestry offer an Urban Forestry minor for graduate students. Urban Forestry is the design, establishment and maintenance of urban forests to enhance the economic value of cities and to provide a healthier environment for people. The minor promotes interdisciplinary studies and trains students for employment in the urban forestry arena. Auburn University, with its strengths in Horticulture, Forestry, Landscape Architecture, Community Planning and Agriculture and its proximity to major urban centers such as Atlanta, Birmingham, Columbus and Montgomery, offers a unique opportunity for urban forestry research and education.

To be eligible for the minor, students must be enrolled in the Master of Forestry, Master of Agriculture, Master of Science or Ph.D. degree program in Horticulture or Forestry. To complete the minor, students must:

1. Develop an advisory committee including faculty from both forestry and horticulture;
2. Complete a thesis/dissertation research project that pertains to urban forestry, or in the case of Master of Forestry and Master of Agriculture degrees, complete an approved five-credit hour directed study in urban forestry;
3. Complete FY 565, HF/FY 685 and at least one undergraduate or graduate course in tree identification.
4. Complete at least nine hours from the following approved core courses, at least one of which must be outside of the home department or school: HF 521; FY 523, 524, 541, 617; FH 615; CP 501, 640.

To obtain additional information, contact the Graduate Program Coordinator at the Department of Horticulture or the Graduate Program Coordinator at the School of Forestry.

1997-98 GRADUATE SCHOOL CALENDAR

1997 Summer Quarter (Note: Summer school will consist of a regular quarter and one 8-week term.)

April 12-Aug. 10	Registration for Fall Quarter.
May 28	Last day for completing application for admission (including all transcripts and GRE and GMAT scores).
June 18	Classes begin
June 23	Last day for acceptance of approved drafts of doctoral dissertations and last day to apply for foreign language examinations.
July 1-14	Submission of thesis rough drafts for format check.
July 4	Independence Day Holiday.
July 10	Foreign language examinations.
July 21	Last day for submission of approved theses to the Graduate School in final form and last day for filing Form 9 (report of thesis-option final oral examination).
July 22	Mid-Quarter. Last day to drop courses. Future drops will be <u>WF</u> automatically.
Aug. 6	Classes end for term.
Aug. 7-8	Final examinations for term.
Aug. 8	Last day for doctoral and non-thesis final oral examinations.
Aug. 12 - Sept. 23 ..	Late registration for Fall Quarter.
Aug. 15	Last day for submission of final copies of dissertation to Graduate School.
Aug. 21	Classes end for quarter.
Aug. 22	Dead Day.
Aug. 23-28	Final examinations.
Aug. 29	Last day for students to request graduation checks in the Graduate School for December graduation (students must be registered no later than the fifth class day to graduate).
Aug. 29	Graduation.

1997 Fall Quarter

Sept. 2	Last day for completing applications for admission (including all transcripts and GRE or GMAT scores).
Sept. 22	Orientation for new graduate students (10 a.m. - noon).
Sept. 23	Classes begin.
Sept. 29	Last day for acceptance of approved drafts of doctoral dissertations.
Sept. 29	Last day to apply for foreign language examinations.
Oct. 8-17	Submission of thesis rough drafts for format check.
Oct. 11-Nov. 9	Registration for Winter Quarter.
Oct. 16	Foreign language examinations.
Oct. 27	Mid-Quarter. Last day to drop courses. Future drops will be <u>WF</u> automatically. Last day for submission of approved theses to Graduate School in final form and last day for filing Form 9 (report of thesis-option final oral examination).
Nov. 11 - Jan. 6	Late registration for Winter Quarter.
Nov. 21	Last day for doctoral and non-thesis final oral examinations
Nov. 24-30	Thanksgiving Holidays.
Dec. 1	Last day for submission of final copies of dissertations to the Graduate School.
Dec. 5	Classes end.
Dec. 6	Dead Day.
Dec. 8-12	Final examinations.
Dec. 15	Last day for students to request graduation checks in the Graduate School for December graduation (students must be registered no later than the fifth class day to graduate).
Dec. 15	Graduation.

Graduate School

1998 Winter Quarter

December 12	Last day for completing applications for admission (including all transcripts and GRE or GMAT scores).
January 6	Classes begin.
January 12	Last day for acceptance of approved drafts of doctoral dissertations and last day to apply for foreign language examinations.
January 19	Martin Luther King, Jr. Holiday.
Jan. 20-Feb. 3	Submission of thesis rough drafts for format check.
Jan. 24-Feb. 22	Registration for Spring Quarter.
January 29	Foreign language examinations.
February 9	Last day for submission of approved theses to Graduate School in final form and last day for filing Form 9 (report of thesis-option final oral examination).
February 11	Mid-Quarter. Last day to drop courses. Future drops will be <u>WF</u> automatically.
Feb. 24-March 30 ...	Late registration for Spring Quarter.
February 27	Last day for doctoral and non-thesis final oral examinations
March 6	Last day for submission of final copies of dissertations to the Graduate School.
March 12	Classes end.
March 13	Dead Day.
March 14, 16-19	Final examinations.
March 20	Last day for students to request graduation checks in the Graduate School for December graduation (students must be registered no later than the fifth class day to graduate).
March 20	Graduation.

1998 Spring Quarter

March 9	Last day for completing applications for admission (including all transcripts and GRE or GMAT scores).
Sept. 30	Classes begin.
April 6	Last day for acceptance of approved drafts of doctoral dissertations and last day to apply for foreign language examinations.
April 10-21	Submission of thesis rough drafts for format check.
April 11-May 10	Registration for Summer Quarter.
April 11-Aug. 16	Registration for Fall Quarter.
April 23	Foreign language examinations.
April 27	Last day for submission of approved theses to Graduate School in final form and last day for filing Form 9 (report of thesis-option final oral examination).
May 1	Mid-Quarter. Last day to drop courses. Future drops will be <u>WF</u> automatically.
May 12 - June 18	Late registration for Summer Quarter.
May 22	Last day for doctoral and non-thesis final oral examinations
May 25	Memorial Day Holiday.
May 29	Last day for submission of final copies of dissertations to the Graduate School.
June 3	Classes end.
June 4	Dead Day.
June 5-6, 8-10	Final examinations.
June 12	Last day for students to request graduation checks in the Graduate School for December graduation (students must be registered no later than the fifth class day to graduate).
June 12	Graduation.

NOTE: Registration schedules and fee bills are mailed to students prior to the beginning of each quarter.

Reserve Officers' Training Corps

Department of Air Force Aerospace Studies (AFROTC)

COLONEL DANNY C. REHM

Commander and Professor of Aerospace Studies

THIS COUNTRY'S FUTURE as the world's leading military power depends largely on its military leaders. The Air Force Reserve Officer Training Corps has the role of preparing young men and women for military leadership. All cadets who successfully complete the program will be commissioned as officers upon college graduation. The Air Force needs junior officers to fly sophisticated aircraft, to operate high-speed computers, to work in research and development and to specialize in fields such as law and medicine. Numerous opportunities exist for liberal arts majors as well. Air Force ROTC offers a four-year program and a two-year program. Air Force ROTC classes are open to all college students. Interested students should contact the Department of Air Force Aerospace Studies.

General Military Course (GMC)

The General Military Course comprises one class hour and a one-and-a-half hour Leadership Laboratory each week. One credit hour is allowed for each quarter of the six-quarter basic courses. Up to six credit hours may be applied toward the total credits required for graduation. At leadership laboratory, cadets receive leadership training in military customs and courtesies, drill and ceremonies, flag etiquette, physical fitness, ethics and officership. Students are also provided the opportunity to visit various Air Force bases to acquaint them with operational Air Force units.

Curriculum in the General Military Course

AF 101-102-103 The Air Force Today

AF 201-202-203 The Air Force Way

Professional Officer Course (POC)

The Professional Officer Course consists of a six-quarter course series normally taken during the junior and senior years. Enrollment in the POC is also open to graduate students if they have six quarters of school remaining. Three classroom hours of instruction and a one-and-a-half hour Leadership Laboratory are taken per week. Six credit hours may be applied toward graduation. All POC cadets must complete a course in mathematics reasoning (normally fulfilled by the core requirements). At present, all POC cadets who meet eligibility criteria receive \$2,000 each year for tuition and books. Additionally, they receive a monthly allowance of \$150.

Curriculum in the Professional Officer Course

AF 301-302-303 Air Force Leadership and Management

AF 401-402-403 National Security Affairs/Preparation for Active Duty

Field Training (FT)

Cadets completing the General Military Course attend four weeks of FT during the summer at a selected Air Force Base (those not having completed the GMC attend six weeks). This rigorous program of leadership training, physical conditioning and academics assesses the cadet's potential to be an Air Force officer. Cadets also receive survival and firearms training, career information and a military aircraft orientation flight. Cadets receive travel pay and daily pay for FT.

Air Force ROTC Scholarships

Air Force ROTC offers two-, three- and four-year scholarships on a competitive basis. AFROTC also offers scholarships for under-represented minorities with a 2.65 cumulative GPA in any major. These scholarships pay for tuition, books and lab fees, and gives a cadet an allowance of \$150 per month. Cadets must meet certain eligibility requirements, such as age, GPA, medical and physical fitness.

Even if a cadet is not on scholarship, he/she can still receive approximately \$2,000 per school year plus \$150 a month. Those juniors and seniors in AFROTC not on scholarship are eligible to receive the Professional Officer Corps Incentive (POCI). As long as the cadet maintains a 2.35 term GPA, receives no Fs and no more than one D per quarter, the POCI provides the cadet with \$666 per quarter (POCI is an on/off incentive – if the term GPA is back up the next quarter POCI is reinstated). POCI recipients also receive the additional allowance of \$150 per month.

Flight Screening

Pilot candidates go through flight screening after graduating from Auburn and prior to attending pilot training. Flight screening includes ground school and flight instruction in the USAF T-3 Firefly.

Professional Development Training (PDT)

Cadets are eligible to compete to attend PDT during their summer months. PDT consists of several different programs, including Army Airborne, USAF Survival Training, USAF Freefall parachute training, Field Training Assistant, USAF Academy Soaring program, and the British Exchange program. Cadets receive travel pay and daily pay for the majority of these programs. For more information, call 844-4355 or visit our web site (http://www.auburn.edu/academic/rotc/afrotc/au_afrotc.html).

Department of Military Science

LIEUTENANT COLONEL LOYD F. LAWING JR.

Professor of Military Science and Commander

THE PURPOSE of the Army ROTC program is to select, train and motivate the future leadership of the active Army, Army National Guard and Army Reserve. Initial ROTC courses serve to acquaint Auburn students with the Army and its role in our society; advanced ROTC courses prepare students for service as a commissioned officer. The overall Army ROTC curriculum prepares students to become effective leaders and managers in a variety of challenging fields.

The curriculum is divided into two courses; a General Military Course open to all freshmen and sophomores and an Officer Development Course for qualified juniors, seniors and graduate students. Successful completion of both courses and award of a bachelor's degree constitute the normal progression to gaining a commission as a Second Lieutenant. Courses are available to both men and women students.

Students undecided about pursuing commissions may keep this option open by participating in the General Military Course together with their chosen curriculum. This provides freshmen and sophomores the opportunity to make an educated decision on the advantages of gaining an officer's commission while incurring no military obligation. Successful completion of the General Military Course or commensurate training, a minimum 2.0 GPA and medical qualifications are prerequisites for enrollment in the Officer Development Course.

General Military Course

Basic Program — The Basic Military Science courses enrich the freshman and sophomore students' courses of study and count toward their graduation requirements. Completing these courses also opens up an additional career option, enabling them to participate in advanced studies toward award of an officer's commission. Subsequently, they may gain either active service or service in the National Guard or Reserves while pursuing their civilian career choices. The basic program consists of a six-quarter block of instruction taken during the freshman and sophomore years. Successful completion of MS 101, 102, 103, plus MS 201, 202, 203, together with leadership lab each quarter, satisfies the academic requirements for progression to the Officer Development Course. One credit hour per quarter is earned in each of the courses. Approval may be obtained to allow completion of all six courses within one academic year.

Curriculum In The General Military Course (MS I/MS II) (Basic Program)

- MS 101 The U.S. Army Today *
- MS 102 Contemporary Military Issues *
- MS 103 Modern Military Weapons and Operations *
- MS 201 Military Power and National Security *
- MS 202 Map Reading *
- MS 203 Leadership and Management *

* Includes Leadership Lab and physical conditioning three days per week.

Other MS courses provide unique hands-on training in mountaineering, tactics and wilderness skills. The Professor of Military Science may grant basic program credit for completion of these hands-on training courses. Selected courses are offered Fall, Winter and Spring Quarters with two credit hours earned for each course. Elective credits apply toward degree requirements in all schools of the university. The following course is available for Elective credit: MS 305 Ranger Operations (*Different Instruction is offered each quarter*).

Optional Basic Camp

Those academically qualified students who are unable to fulfill the requirements of the Basic Program during their freshman and sophomore years may qualify themselves for admission to the Officer Development Course by successfully completing Basic Camp preparatory training. The basic camp option consists of a six-week training period conducted at an active Army post during the summer months. Students desiring to exercise this option are required to submit a formal application and pass a general physical.

Students electing the basic camp training program will receive approximately \$750 in addition to travel expenses to and from camp. Uniforms, housing, medical care and meals are furnished by the government during the camp.

Deadline for applications is May 30. Interested students should contact the Military Science Department at the start of Spring Quarter, or earlier.

Officer Development Course

Advanced Program — The Advanced Program is designed to develop fully a candidate's leadership and management potential, physical stamina, and poise, as well as those personal characteristics desired in an Army Officer. The program's objective is to produce the highest caliber junior officer fully capable of command and management responsibilities in the modern Army and the business world.

The Officer Development Course consists of a six-quarter block of instruction taken during the junior and senior years. Successful completion of six courses together with leadership laboratory each quarter fulfills military science academic requirements for award of an officer's commission. Three credit hours per quarter are earned in each of the courses. Students currently receive a subsistence allowance of \$150 a month (tax free) not to exceed \$1500 per academic year, while enrolled.

Service veterans, junior or military college transfers, members of the National Guard or Army Reserve, and former military academy cadets may qualify for direct entry into the Officer Development Course.

Advanced program students are eligible to participate in the Simultaneous Membership Program with the Army National Guard or Army Reserve. Students participating in this program affiliate with an Army unit as a student officer thus affording them the opportunity for enhanced leadership development. Students in this program receive an additional \$160 per month and Montgomery GI Bill benefits if qualified.

Students enrolled in the Officer Development Course are also required to complete successfully a six-week Advanced Camp at Fort Lewis, Washington, during the summer to become eligible for commissioning. Attendance at Advanced Camp normally occurs in the summer between the junior and senior years. The purpose of Advanced Camp training is to provide each candidate hands-on experience in leadership development positions as well as extensive training in military tactics, techniques and related subjects vital to success as a junior officer. Students attending Advanced Camp receive approximately \$825 in addition to travel expenses to and from Fort Lewis. Uniforms, housing, medical care and meals are furnished by the government during the camp.

Additional voluntary training at one or more of a variety of active Army service schools is available to selected students during the summer. Students may select attendance at Airborne School, Air Assault School, The Northern Warfare Training Center and Cadet Troop Leadership Training. Students who successfully complete the appropriate course are authorized to wear the coveted Parachutist Badge and Air Assault Badge.

Students who successfully complete the Army ROTC curriculum and who gain a bachelor's degree serve on active duty or with the Army National Guard or Army Reserve. Outstanding candidates who are selected as Distinguished Military Students may gain Regular Army commissions. Active duty is for a period of three years with the opportunity for quality officers to apply for extended service. Current salary and allowances for a married Second Lieutenant exceed \$27,000. Medical and other benefits are also provided at no cost. The following courses constitute the Advanced Program.

Curriculum In The Officer Development Course (MS III/IV) (Advanced Program)

- MS 301 Land Navigation Techniques *
- MS 302 Military Training and Instruction Techniques *
- MS 303 Military Qualification Skills *
- MS 401 Military Justice and Ethics *
- MS 402 Adv. Leadership and Management I*
- MS 403 Adv. Military Leadership and Management II *
- MS 404 Leadership Laboratory

* Includes Leadership Lab and physical conditioning three days a week.

Professional Military Education Requirements

All Army ROTC cadets are required to complete one quarter of selected undergraduate courses in five designated fields of study prior to graduation.

The fields of study and approved courses are:

Written Communication Skills: fulfilled by the Core Curriculum.

Humanities: fulfilled by the Core Curriculum.

Military History: HY 309 (*Alternate course may be taken with PMS approval*).

Computer Literacy: CSE 100 through 422.

Math Reasoning: fulfilled by the Core Curriculum.

Scholarship Programs

Each year the Army offers a variety of full scholarship programs to those young men and women who have demonstrated outstanding academic scholarship and leadership potential. Four-year scholarships are awarded incoming freshmen through national merit competition. Three- and two-year scholarships are available on a national competitive basis. Scholarships will pay most or all of the tuition costs for both resident and out-of-state students, textbooks, materials and laboratory fees. In addition, the students receive a \$150 a month tax-free allowance.

Army Nurse Corps Option

Students enrolled in the School of Nursing curriculum leading to the degree of Bachelor of Science in Nursing may simultaneously qualify for commissions as Second Lieutenants in the Army Nurse Corps.

Nursing students qualify for entry into the Officer Development Course through satisfactory completion of either the General Military Course, the Basic Camp option or equivalent training.

Nursing students participate in a two-week summer Advanced Camp training program and an Army nurse training program. The alternate advanced training is a voluntary six-week program for nursing students at selected medical treatment facilities throughout the United States. It is structured to provide practical and leadership experience in the clinical setting. The primary focus is providing nursing cadets an experience which integrates clinical, interpersonal and leadership knowledge and skills. Emphasis is placed on practical experience under the direct supervision of an Army Nurse Corps Officer who acts as the cadet's preceptor throughout the camp period.

Department of Naval Science

CAPTAIN JIMMY L. ELLIS, USN

Commanding Officer and Professor of Naval Science

THE MISSION OF NROTC is to develop midshipmen mentally, morally and physically and to commission college graduates as naval officers who possess a basic professional potential for future development in mind and character so as to assume the highest responsibilities of command, citizenship and government. All NROTC Programs are open to qualified men and women students. All Naval Science courses, basic and advanced, are open to all Auburn students regardless of affiliation with the NROTC Program.

Types of NROTC Programs

Four-Year NROTC Navy-Marine Scholarship Program. Successful completion leads to commission in the Navy or Marine Corps Reserve. Minimum active duty service is four years.

Tuition, fees, and all textbooks are paid for by the government. Subsistence pay is \$150 per month for a maximum of 40 months. Active duty pay for summer training is approximately \$560 per month with living quarters and meals provided.

Although the Navy emphasizes engineering and science majors, students may take most Auburn University majors leading to baccalaureate degrees. In addition to the requirements of their major, NROTC students must complete 36 quarter hours of Naval Science. Summer activities include two at-sea training cruises and one summer period of career orientation lasting from four to eight weeks each. Marine Option students participate in a six-week orientation at Quantico, VA in lieu of the second at-sea training cruise. Navy Option Scholarship students must complete calculus and physics courses.

Entrance to the Navy-Marine Scholarship Program is via nationwide competition. Applicants must make independent arrangements to take either the Scholastic Aptitude Test or the American College Test.

Scholarship students may resign without obligation any time prior to the beginning of the second year in the Program.

Qualifications for enrollment, application blanks and information bulletins are available at high schools, colleges, recruiting stations and the Auburn NROTC Unit.

Four-Year NROTC Navy-Marine College Program. Leads to a commission in the Navy or Marine Corps Reserve. Subsistence pay is \$150 per month for a maximum of 20 months during the final two years of training. Minimum active duty service is three years (3 1/2 years for Marines). Any Auburn student may enter the College Program through application to the Professor of Naval Science.

Four-year College Program students may resign from the Program at any time during the freshman and sophomore years without obligation. After the sophomore year, college program students must apply for advanced standing to continue in the program.

Students in both the four and two-year programs may apply for the Scholarship Program through nomination by the Professor of Naval Science for appointment by the Chief of Naval Education and Training as Scholarship students.

College Program students must complete Naval Science requirements prior to or concurrently with receipt of a baccalaureate degree. Summer training consists of at-sea training cruise between junior and senior years. Students desiring commissions in the Marine Corps will participate in a six-week orientation at Quantico, VA in lieu of at-sea training.

Two-Year NROTC Navy-Marine Scholarship and College Programs. Selections for these programs are made on a national basis from nominations submitted by the Professors of Naval Science. Selected applicants attend the Naval Science Institute (NSI) for six weeks during the summer prior to the junior year. Successful NSI completion qualifies students for enrollment in the advanced course of the NROTC Program.

NROTC Nurse Corps Option Scholarship Program. Successful completion leads to commission in the Naval Reserve Nurse Corps. Minimum active duty is four years. Tuition, fees, all textbooks and all equipment and uniform items within the BSN degree curriculum are paid by the government. Subsistence pay and active duty pay for summer training is equivalent to the pay provided by the Navy-Marine Scholarship Programs.

Students must be enrolled in the BSN program and are required to complete NS 111, 212, 213 and 411-413 only. Summer activities include one at-sea training cruise and one shore-based hospital training period.

Entrance to the NROTC Nurse Corps Option Scholarship Program is via nationwide competition. Applications for Nurse Corps Option Program scholarships may be obtained at the Auburn NROTC Unit. The Nurse option is also available under the Four-Year College Program.

Equipment

Uniforms, Naval Science textbooks and equipment necessary for the NROTC Program are furnished in all four programs.

Curriculum

The Naval Science curriculum consists of the following class hours per week: Freshman, three hours; Sophomore, three hours; Navy Option Juniors, three hours (Nurse Option, none); Marine Option Juniors, three hours; Seniors, three hours (Nurse Option, none). All students attend the Naval Science laboratory for two hours per week.

Naval Science subjects carried during the four-year curriculum are listed in the Description of Courses section of this Bulletin. Only 300/400 series subjects are applicable to the Two-Year Programs.

Naval Science course hours are considered as part of the normal quarterly loads; however, Auburn University graduation requirements are increased 11 to 20 hours, depending upon the College or School in which the student is enrolled, over the number of hours listed in the *Auburn University Bulletin*.

Courses of Instruction

THIS SECTION lists and describes all undergraduate courses taught by the departments of the University. The courses are presented by subjects, arranged alphabetically. The subject name (the heading in large type) is followed by the departmental symbol in parentheses. Below the subject appears a list of the departmental faculty.

The subject name (symbol) together with the course number constitutes the official designation for the course for purposes of registration and official records. The specific course title appears following the course number. The figures in parentheses denote the number of quarter hours of credit for the course. Following the credit hours are listed lecture and laboratory clock hours, if applicable. If none are listed, the course consists of lecture hours equal in number to course credit. Next appear the prerequisites, if applicable.

Courses are numbered according to the following system:

- 101-199 Courses primarily for freshmen.
- 201-299 Courses primarily for sophomores.
- 301-399 Courses primarily for juniors.
- 401-499 Courses primarily for seniors. Not open to graduate students.
- 501-599 Courses for advanced undergraduate and graduate students; and for fifth year students in professional curricula. **Junior Standing Required For Enrollment At This Level.**
- 601-799 Courses for graduate students.

INDEX BY FIELDS OF INSTRUCTION

(Departmental symbols in parentheses)

Accountancy (AC)	229	Electrical Engineering (EE)	306
Aerospace Engineering (AE)	231	Elementary Education (CTE)	288
Aerospace Studies (AF)	234	Engineering (EGR)	311
Agricultural Economics (AEC) and Rural Sociology (RSY)	235	English (EH)	311
Agricultural Engineering (AN)	238	Entomology (ENTI)	315
Agriculture (AG)	240	Environmental Science (ENS)	316
Agronomy and Soils (AY)	240	Finance (FI)	317
Anatomy and Histology (VAH)	427	Fisheries and Allied Aquacultures (FAA)	318
Animal and Dairy Sciences (ADS)	243	Foreign Languages and Literatures	320
Anthropology (ANT)	415	Forest Engineering (FYE)	329
Architecture (AR)	245	Forest Products (FP)	331
Art (AT)	249	Forestry (FY)	332
Aviation Management (AM)	252	Foundations of Education (FED)	303
Biology (BI)	255	French (FR)	321
Biomedical Sciences (BMS)	255	Geography (GY)	335
Botany and Microbiology (BY)	255	Geology (GL)	336
Building Science (BSC)	259	German (GR)	323
Chemical Engineering (CHE)	260	Graduate School (GS)	339
Chemistry (CH)	263	Greek (GK)	324
Chinese (CN)	321	Health Administration (HA)	340
Civil Engineering (CE)	266	Health and Human Performance (HHP)	340
Communication (COM)	271	History (HY)	345
Communication Disorders (CD)	275	Horticulture (HF)	349
Community Planning (CP)	247	Hotel and Restaurant Management (HRM)	388
Computer Science & Engineering (CSE)	277	Human Development and Family Studies (HDF)	351
Consumer Affairs (CA)	281	Industrial Design (DSN)	354
Counseling and Counseling Psychology (CCP)	284	Industrial and Systems Engineering (ISE)	355
Criminal Justice (CJ)	286	Interdepartmental Education (IED)	359
Criminology (SCR)	416	Interior Design (ID)	248
Curriculum & Teaching	287	Italian (IT)	324
Discrete and Statistical Sciences (DMS)	295	Japanese (JP)	324
Early Childhood Education (CTC)	287	Journalism (JM)	359
Economics (EC)	297	Laboratory Technology (LT)	360
Educational Foundations, Leadership and Technology (EFLT)	300	Landscape Architecture (LA)	249
Educational Leadership (EDL)	300	Large Animal Surgery and Medicine (VLA)	428
Educational Media (EM)	300	Latin (LN)	324
		Management (MN)	360
		Marketing and Transportation (MT)	364

Accountancy

Materials Engineering (MTL)	366	Public Relations (PR)	275
Mathematics (MH)	369	Radio/Television/Film (RTF)	273
Mechanical Engineering (ME)	374	Radiology (VR)	431
Microbiology (MB)	257	Reading Education (CTR)	291
Middle School Education (CTD)	290	Rehabilitation and Special Education (RSE)	409
Military Science (MS)	378	Religion (RL)	413
Music (MU)	379	Rural Sociology (RSY)	237, 415
Music Education (CTM)	290	Russian (RU)	325
Naval Science (NS)	383	Sciences and Mathematics (SM)	413
Nursing (NUR)	384	Secondary Education (CTS)	293
Nutrition and Food Science (NFS)	386	Small Animal Surgery and Medicine (VSA)	431
Pathobiology (VPB)	428	Sociology (SOC), Anthropology (ANT) and Social Work (SW)	413
Pharmaceutical Sciences (PY)	389	Spanish (SP)	325
Pharmacy Care Systems (PCS)	391	Textile Chemistry (TC)	418
Pharmacy Doctorate (PYD)	392	Textile Engineering (TE)	418
Pharmacy Practice, Clinical (PC)	393	Textile Management and Technology (TMT)	419
Philosophy (PA)	395	Theatre (TH)	420
Physical Science (PHS)	396	University Courses (U)	423
Physics (PS)	397	Veterinary Medicine (VM)	424
Physiology and Pharmacology (VPH)	430	Vocational and Adult Education (VED)	432
Plant Pathology (PLP)	400	Zoology-Wildlife Science (ZY)	435
Political Science (PO)	401		
Portuguese (PT)	325		
Poultry Science (PH)	404		
Psychology (PG)	406		

Accountancy (AC)

Professors Clark, *Director*, Alderman, Fields and Wilson
Associate Professors Price, Rasch, Tabor and Worthington
Assistant Professors Bryan, J. Smith, R. Smith and Stanwick
Instructors Campbell, Dunn, Cook, Evans, Garverick and Haygood

A 2.0 GPA is required for enrollment in any Business course at the 300-level or above. This rule applies to both Business and non-Business students.

211. PRINCIPLES OF ACCOUNTING I (4). Pr., sophomore standing. Basic accounting principles, including the accounting cycle and preparation of financial statements. AC 211 is not open to students with credit in AC 215.
212. PRINCIPLES OF ACCOUNTING II (4). Pr., AC 211. A continuation of accounting principles with emphasis on their application to partnerships, corporations and preparation and analysis of various financial statements.
213. MANAGERIAL COST AND BUDGETING (4). Pr., AC 212 and non-Accounting major. Introductory cost accounting and budgeting with emphasis on distribution costs and managerial accounting problems.
215. FUNDAMENTALS OF GENERAL AND COST ACCOUNTING (5). Pr., sophomore standing. Fundamental concepts and principles of general and cost accounting. Emphasis on accumulating, reporting and interpreting cost data in the production area of business operations. (Not open to undergraduates majoring in Business. Credit in AC 211 precludes credit for AC 215.)
241. BUSINESS LAW I (5). Introduction to contracts, sales, torts and insurance; ethics and social influences.
242. BUSINESS LAW II (5). Legal principles concerning secured transactions, bankruptcy, suretyship, trusts and estates, partnership law, real and personal property, corporations, federal securities, regulations, accountant's legal liability, negotiable instruments and ethics and social influences.
255. LEGAL AND SOCIAL ENVIRONMENT OF BUSINESS (4). Legal and social environment for business operation with emphasis on contemporary issues.
311. INTERMEDIATE ACCOUNTING I (5). Pr., AC 212 and junior standing. Accounting principles and theory, including a review of the accounting cycle and accounting for current assets, current liabilities and investments.
312. INTERMEDIATE ACCOUNTING II (5). Pr., AC 311 with a grade of C or better. Continuation of accounting principles and theory with emphasis on accounting for fixed assets, intangibles, corporate capital structure, long term liabilities and investments.
313. INTERMEDIATE ACCOUNTING III (5). Pr., AC 312, a GPA of 2.5 or better in AC 311 and 312 and a GPA of 2.7 or better in all accounting courses taken. Continuation of accounting principles and theory. Emphasis on pension costs, leases, analysis of financial statements and funds flow, segment reporting and interim reporting.
314. INCOME TAX ACCOUNTING (5). Pr., AC 311. Interpretation of the regulations, preparation of returns and the keeping of accounting records for tax purposes.

319. BUSINESS LAW FOR ACCOUNTANTS (5). Pr., AC 312. Business law applied to the environment and applications of accountancy.
400. STUDENT INTERNSHIP PROGRAM (1-10). Pr., junior standing and selection by the faculty committee. S-U Grading.
415. ACCOUNTING INFORMATION SYSTEMS (5). Pr., MN 314 and AC 417. Introduction to accounting information systems, including manual and computerized operations. Emphasis on documentation and controls for the various accounting cycles. Applications of Lotus and dBase software to accounting problems are involved.
416. AUDITING (5). Pr., AC 313, Coreq., AC 415 and senior standing. Principles of auditing including auditing standards, ethics, legal liability, objectives, controls, evidence, planning, sampling concepts, credit reports, audit reports and other reports.
417. COST ACCOUNTING (5). Pr., AC 312. Accounting principles and procedures involved in job-order, process and standard cost accounting.
470. HONORS READINGS (1-6). Pr., open only to persons in the University Honors Program and with consent of the student's Honors Advisor.
472. HONORS THESIS (1-6). Pr., open only to persons in the University Honors Program and with consent of the student's Honors Advisor.
490. SPECIAL PROBLEMS. (1-10). Pr., AC 313 and senior standing. Advanced individual research and study of accountancy under guidance of a faculty member. S-U Grading.
499. SEMINAR IN CURRENT ACCOUNTING TOPICS (1). Pr., graduating seniors. The current literature, problems and controversies affecting the accounting profession.

COURSES FOR GRADUATE STUDENTS

610. MANAGERIAL ACCOUNTING (5). Pr., AC 613 or equivalent and, for non-business students, permission of the Director of the MBA program. Application of fundamental accounting concepts and introduction to cost managerial concepts with a focus on current problems in decision-making, planning and control.
611. ADVANCED ACCOUNTING THEORY (5). Pr., AC 313. Examination of financial accounting theory and various issues related to accounting theory development.
612. GOVERNMENTAL AND ADVANCED ACCOUNTING TOPICS (5). Pr., AC 313 and senior auditing. Accounting for governmental and not-for-profit entities and accounting for business combinations and foreign operations.
613. FOUNDATIONS IN ACCOUNTING FOR MANAGEMENT (3). Pr., MH 140 or equivalent and, for non-business students, permission of the Director of the MBA program. An accelerated course in accounting fundamentals and business applications.
614. ADVANCED INCOME TAX ACCOUNTING (5). Pr., AC 313, 314 and senior standing. Special tax accounting problems of individuals, partnerships, corporations, estates and trusts. Extensive use will be made of a tax service program.
615. FINANCIAL INFORMATION SYSTEMS (5). Pr., AC 313 or departmental approval. Analysis of critical information flows and integration of such flows into efficient and effective information systems serving management needs.
616. ADVANCED AUDITING (5). Pr., AC 416. An intensive study of the theory of auditing and the current problems of practicing accountants.
617. ADVANCED MANAGERIAL ACCOUNTING (5). Pr., AC 417 or equivalent. Applied techniques for managerial problem solving, planning and decision making. Accounting applications of these techniques are emphasized through the use of the case method.
618. ADVANCED FINANCIAL REPORTING (5). Pr., AC 611 and AC 616 or departmental approval. An in-depth study of current financial reporting problems and the resolution of such problems in accordance with professional standards relating to financial reporting.
630. RESEARCH IN FEDERAL TAXATION (5). Pr. AC 614. Extensive study and application of sources of authority used in federal tax research. Also, tax policy issues are surveyed.
631. FEDERAL TAXATION OF CORPORATIONS (5). Pr., AC 630 or departmental approval. Analysis of the federal taxation of corporations and their shareholders, including the tax treatment of corporate organization, distributions, liquidations, accumulations and reorganizations.
632. FEDERAL INCOME TAXATION OF PARTNERSHIPS (5). Pr., AC 630. Analysis of the tax problems of the organization and operation of partnerships, including the treatment of partnership distributions, withdrawal of a partner during his lifetime, death of a partner, dissolution of the partnership, sales or exchanges of partnership interests, limited partnerships and special problems of family partnerships.
633. FEDERAL ESTATE AND GIFT TAXATION (5). Pr., AC 630 or departmental approval. Analysis of the federal taxation of estates and gifts, including determination and evaluating of items included in a decedent's gross estate, identification of transfers subject to the gift tax and federal tax treatment of generation-skipping transfers.
634. CURRENT TOPICS IN TAXATION (5). Pr., AC 630. Intensive study and analysis of statutory, administrative and judicial developments in taxation and their implications for tax planning.
850. SEMINAR (1-10). Pr., departmental approval. For those students engaged in intensive study and analysis of accounting and finance problems.
690. SPECIAL PROBLEMS (1-5). Pr., departmental approval. Variable content in the accounting areas.
699. RESEARCH AND THESIS (CREDIT TO BE ARRANGED.)

Aerospace Engineering (AE)

Professors Cochran, Head, Burkhalter, Cutchins, Foster and Williams

Associate Professors Cicci, Jenkins, Hartfield and Spring

Assistant Professors Barrett, Gross and Lundberg

General Curriculum, CLA, students (those with undeclared major) may enroll only with departmental consent.

- 201. INTRODUCTION TO AEROSPACE ENGINEERING (3). Pr., AE standing or departmental approval. Introduction to aerospace engineering and sub-disciplines.
- 202. INTRODUCTION TO COMPUTATIONAL METHODS (2). LEC. 1, LAB. 3. Pr., AE 201 or departmental approval. Introduction to fundamental aerospace engineering problems with emphasis on commercially available computational tools.
- 226. AEROSPACE DYNAMICS (5). Pr., MH 265, EGR 205. Fundamental principles of dynamics including kinematics and kinetics of particles, kinematics and kinetics of rigid bodies, mass moments of inertia, three-dimensional dynamics of rigid bodies, simple harmonic motion and Lagrangian dynamics. Credit not allowed for both AE 226 and AE 336.
- 300. AERODYNAMICS (5). Pr., AE 201. Properties of fluids, fluid statics, conservation of mass and momentum, atmospheric properties, two-dimensional airfoils, three-dimensional wings, drag and flight performance. Effect of propulsion system and aerodynamics variations on vehicle performance are included. Credit not allowed for both AE 302 and AE 300.
- 301. COMPRESSIBLE FLOW (3). Pr., AE 300. Coreq., AE 306. Principles of compressible flow including flows with area changes, friction and heat transfer; Prandtl-Meyer flows; oblique and normal shock waves; characteristics; linearized compressible flows and airfoils in supersonic flow. Credit not allowed for both AE 304 and AE 301.
- 306. AERODYNAMICS LABORATORY (2). LEC. 1, LAB. 3. Pr., AE 300. Coreq., AE 301. Application of fundamental aerodynamic principles to subsonic and supersonic wind tunnel experiments.
- 307. AEROSPACE STRUCTURES I (4). LEC. 3, LAB. 3. Pr., EGR 207. Basic structural analysis. Shear and bending in monocoque structures. Deflections of beams and frames. Column and plate buckling. The laboratory portion is devoted to experimental techniques in stress analysis.
- 308. THEORETICAL AERODYNAMICS (3). Pr., AE 300. Fundamental analysis of aerodynamics and potential flow theory. Correlation of potential flow theory with experimental data. Basic elements of thin airfoil and lifting line theory. Credit not allowed for both AE 308 and AE 303.
- 311. AEROSPACE MATERIALS (3). Nomenclature, coding systems, physical and structural properties, applications and fabrication techniques as applied to aerospace materials.
- 332. ASTRODYNAMICS I (3). Pr., AE 226 or departmental approval. Geometry of the solar system, detailed analysis of two-body dynamics and introduction to artificial satellite orbits; Hohmann transfer and patched conics for lunar and interplanetary trajectories. Elements of orbit determination.
- 334. AEROSPACE SYSTEMS ANALYSIS (3). Pr., AE 226. Modeling of dynamic systems, linearization, stability of linear systems, time response performances.
- 339. STATIC STABILITY AND CONTROL (4). LEC. 3, LAB. 3. Pr., AE 300. Introduction to static stability and control of flight vehicles including laboratory techniques for determination of stability parameters.
- 400. VISCOUS AERODYNAMICS (3). Pr., AE 301. Theoretical background essential to a fundamental understanding of laminar and turbulent boundary layers and their relations to skin friction and heat transfer.
- 409. AEROSPACE STRUCTURES II (4). LEC. 3, LAB. 3. Pr., CSE 120 or equivalent knowledge of FORTRAN programming, AE 307, 310. A continuation of AE 307. An introduction to the finite element method. The laboratory portion is devoted to solution of structural problems on the digital computer.
- 415. JET PROPULSION (5). LEC. 4, LAB. 3. Pr., AE 301. Internal aerodynamics and thermodynamics of rockets and air-breathing jet engines. Jet nozzles. Detailed analysis of flow through turbojet compressors, combustors and turbines.
- 447. AEROSPACE DESIGN I (3). LEC. 2, LAB. 3. Pr. AE 301, 307, 332 and 339. Application of the design process with emphasis on development of creative thinking and team efforts. An investigation of a current aerospace problem which results in the presentation of oral and written technical reports. A three-quarter sequence with AE 448 and 449.
- 448. AEROSPACE DESIGN II (3). LEC. 2, LAB. 3. Pr., AE 447. A continuation of AE 447.
- 449. AEROSPACE DESIGN III (3). LEC. 2, LAB. 3. Pr., AE 448. A continuation of AE 448.
- 479. HONORS THESIS (1-6). Pr., department head approval. Individual student endeavor consisting of directed research and writing of honors thesis. (AE Honors Program students only. May be repeated once for a maximum of 6 total credit hours.)
- 491. SPECIAL PROBLEMS. (1-5 CREDIT HOURS TO BE ARRANGED). Pr., departmental approval. Not open to graduate students.

ADVANCED UNDERGRADUATE AND GRADUATE

- 501. ADVANCED THREE-DIMENSIONAL AERODYNAMICS (3-5 CREDIT HOURS TO BE ARRANGED). Pr., AE 301 and departmental approval. Advanced concepts in the application of aerodynamic principles to finite wings and bodies, thickness effects, interference effects and computer simulation.

508. INTRODUCTION TO COMPUTATIONAL FLUID DYNAMICS (5). Pr., AE 301. An introduction to the application of modern numerical and computational techniques to problems arising in fluid dynamics. Emphasis is on solving practical problems and understanding the basic physical phenomenon involved.
509. COMPUTER-AIDED ANALYSIS OF AEROSPACE STRUCTURES (3) Pr., AE 409 or equivalent. Application of interactive computer-aided techniques to the analysis of aerospace structures.
514. HYPERSONIC AERODYNAMICS (3). Pr., AE 301. Introduction to hypersonic aerodynamics. Development of hypersonic methods such as shock-expansion waves, local surface inclination techniques and approximate theories. Applications to problems in hypersonic flow regime.
516. ROCKET PROPULSION I (3). Pr., AE 415. Detailed analysis of the thermodynamics, gasdynamics and design of liquid-propellant rockets.
517. ROCKET PROPULSION II (3). Pr., AE 415. Design and performance analysis of solid-propellant rocket motors with emphasis on internal ballistics.
520. DYNAMIC SIMULATION (3). Pr., AE 226. Computer techniques applied to the analysis of aerospace engineering problems using analog and hybrid computers and the digital problem-oriented language Advanced Continuous Simulation Language (ACSL).
521. FLIGHT VEHICLE STRESS ANALYSIS (3). Pr., AE 307. Stress analysis related to aircraft, missile and space structures.
522. AEROSPACE APPLICATIONS OF COMPOSITE MATERIALS (3). LEC. 2, LAB. 3. Pr., AE 311. Reinforcement materials, matrix materials and manufacturing techniques employed to produce aerospace structural components from composite materials.
523. AEROSPACE APPLICATIONS OF COMPOSITE MATERIALS II (3). LEC. 2, LAB. 3. Micromechanical and macromechanical behavior of laminated composite material structures. Computational structural analysis of typical aerospace composite structures coupled with experimental verification of the structural response.
528. SPACE PROPULSION SYSTEMS (5). Pr., AE 415. Introduction to reaction engines for use in outer space vehicles. Power requirements for space missions, nuclear power systems, ion engines, magnetohydrodynamics and plasma accelerators and photonic engines.
529. VIBRATION AND FLUTTER (3). Pr., AE 226, 409. Free, forced and damped vibration of single and multiple degree-of-freedom systems; introduction to vibration of continuous systems; flutter theory; applications in aerospace.
532. APPLICATIONS OF THE GLOBAL POSITIONING SYSTEM (3). Pr., senior standing or departmental approval. Concepts of the operating principles of the control, space and user segments of the Global Positioning System. Review of post-processing and real-time positioning strategies and applications. Field work demonstrating the use of GPS receivers, data processing and possible solution accuracy.
533. ASTRODYNAMICS II (3). Pr., AE 332. Elements of general perturbation theory; n-body formulation and introduction to 3-body problem; introduction to powered flight analysis and space flight guidance.
534. SATELLITE APPLICATIONS (3). Pr., AE 332 or departmental approval. Principles related to the application of satellites to remote sensing, telecommunications, navigation and trajectory determination. The use of manned and unmanned spacecraft within the bounds of current space law.
535. ELEMENTS OF V/STOL FLIGHT (3). Pr., AE 308 or departmental approval. Analysis of methods for generating high lift at low vehicle forward speeds.
536. ROTARY WING AERODYNAMICS (3). Pr., AE 308. Aerodynamics and flight characteristics of rotary wing aircraft.
541. DYNAMIC STABILITY AND CONTROL (3). Pr., AE 334, 339. Derivation of the kinematic and dynamic equations used to describe the motions of aircraft. Analysis of the stability of steady state flight conditions. Response of aircraft to actuation of controls.
542. AUTOMATIC STABILITY AND CONTROL (3). Pr., AE 541. Principles and techniques of automatic control of aircraft and missiles. Effects on design variables.
543. FLIGHT SIMULATION (3). Pr., AE 541 and departmental approval. Time domain simulation to the nonlinear six-degree-of-freedom motions of aircraft. Models for aerodynamics, propulsion and control systems. Special computer techniques applied to the generation of various flight profiles.
545. MISSILE AERODYNAMICS (3). Pr., AE 301. Aerodynamics of slender wing-body configurations for the low supersonic, moderate hypersonic and Newtonian continuum flow regimes. Linear and non-linear effects are considered as well as interference effects. Application to missile performance and stability for certain flight profiles.
580. ENGINEERING LAW AND ETHICS (3). Pr., senior standing. Addresses the role of law in the manufacture of a product. Includes legal issues of contracts, product liability, workers' safety and environmental control. Considers ethical issues which may confront designers and engineers.

COURSES FOR GRADUATE STUDENTS

601. ADVANCED SUPERSONIC AERODYNAMICS (5). Pr., AE 400. A rigorous development of linearized and nonlinear fluid flow theories and application. Lifting surfaces, lifting bodies, duct flow, boundary layer effects, shock and expansion waves and method of characteristics.
602. ADVANCED ELEMENTS OF HIGH SPEED AERODYNAMICS (5). Pr., AE 601 or equivalent. A continuation of AE 601 to include three-dimensional wing theory; slender body theory and similarity laws for subsonic, supersonic and hypersonic flow conditions.
603. DYNAMICS OF VISCOUS FLUIDS I (5). Pr., AE 601 or equivalent. Exact solutions to the Navier Stokes equations. Exact and approximate solutions of the laminar boundary layer equations. Incompressible and compressible boundary layers in theory and experiment.

604. ADVANCED LOW-SPEED AERODYNAMICS (4). Pr., AE 303. Theoretical analysis of two-dimensional airfoils, Joukowski transformations, Theodorsen's theory and other techniques for determining flow characteristics over any two-dimensional airfoil. Finite wing analysis, lift distribution on finite wings.
605. AEROELASTICITY (5). Pr., AE 529. May be taken more than one quarter, not to exceed 10 hours. General formulation of aeroelastic problems, divergence, flutter and loss of control, dynamic stress, panel flutter.
606. ADVANCED COMPUTATIONAL FLUID DYNAMICS (5). Pr., AE 508 and the ability to program in a high-level computer language (preferably FORTRAN). Continuation of AE 508. Theoretical application of computational fluid dynamic techniques.
607. DYNAMICS OF VISCOUS FLUIDS II (5). Pr., AE 603 or equivalent. A continuation of AE 603. Turbulent flows, the Reynolds stresses and turbulence modeling. Computation of incompressible and compressible turbulent boundary layers. Stability theory and transition.
608. AEROSPACE STRUCTURAL DYNAMICS (5). Pr., AE 529. Advanced theory of matrix structural analysis with applications to dynamics of flight.
609. ADVANCED AERO-STRUCTURES (3). Pr., AE 529. Vibrations of solids and wave propagation, introduction to general methodology and thermodynamics of solids, derivation of large-deflection equations, principles of basic solids investigations and application to aerospace structures.
610. ADVANCED VIBRATIONS PHENOMENA (5). Pr., AE 529. Aerospace applications of dynamic phenomena measurement including linear varying differential transformers, piezoelectric accelerometers, dynamic force gages and strain gages. On line use of hybrid and digital computers for data analysis and combined experimental simulation involving both experiment and computer. Use of various types of shakers in dynamic tests.
611. THRUST GENERATION (5). Pr., AE 415. Aerothermodynamics of compressible flow, chemical propellant characteristics, heat transfer in fluid flow, nuclear propulsion.
612. AEROTHERMOCHEMISTRY OF PROPULSION (5). Pr., AE 611 or departmental approval. Topics emphasizing interrelations between internal aerodynamics and combustion phenomena in air-breathing jet engines and rockets. Various techniques of establishing equilibrium composition and flame temperatures; comparison of frozen and equilibrium flow in nozzles; effects of condensed phases, supersonic combustion.
613. ADVANCED AIR-BREATHING PROPULSION (5). Pr., AE 611 or departmental approval. Topics emphasizing interaction between external aerodynamics and performance of air-breathing jet engines, boundary layer effects in diffusers and compressors and detailed analysis of various techniques of minimizing detrimental effects, compressor and turbine matching in turbojets, cascade aerodynamics and variable area jet nozzles.
615. HYPERSONIC FLOW THEORY (5). Pr., AE 400. May be taken more than one quarter, not to exceed 15 hours. Hypersonic continuum theory, governing equations of motion for two and three dimensional flows, hypersonic small disturbance theory, viscous effects. Real gas effects in gas dynamics and rarefied gas flows, basic heat transfer concepts.
616. REAL GAS DYNAMICS (5). Pr., departmental approval. May be taken more than one quarter, not to exceed 15 hours. A microscopic approach to gas dynamics based on quantum mechanical models and statistical techniques.
617. MOLECULAR THEORY OF AERODYNAMICS (5). Pr., departmental approval. May be taken more than one quarter, not to exceed 15 hours. Free molecular, near-free molecular and transition flows of neutral gases. Basic equations are developed and selected geometries are treated in detail.
624. APPLIED NUMERICAL METHODS FOR AEROSPACE STRUCTURAL ANALYSIS I: STATIC STRUCTURES (5). Pr., AE 409 or departmental approval. Advanced techniques for the numerical solution of static elastic and plastic problems, including two-and-three-dimensional solutions. Analysis of problems with geometric and/or material non-linearities and including isotropic and anisotropic material properties. Evaluation of the effects of stress concentrations, thermal and cyclic loading.
625. APPLIED NUMERICAL METHODS FOR AEROSPACE STRUCTURAL ANALYSIS II: STRUCTURAL DYNAMICS (5). Pr., AE 624 or departmental approval. Advanced techniques for numerical solutions to problems in structural dynamics, including steady state and transient response of two-and-three-dimensional structures. Evaluation of vibratory stresses with regard to high cycle fatigue. Particular emphasis will be placed on the dynamic analysis of plate and shell structures.
627. INTRODUCTION TO LARGE SPACE STRUCTURES (LSSs) (3). Pr., AE 409, 334, 529. Identification of the unique concepts, novel on-earth testing required, various schemes for damping and the differences in analysis techniques related to LSS's. Concepts and analysis related to shape control, active and passive damping, structural dynamics/controls interaction. New scaling problems.
630. DYNAMICS OF FLIGHT (5). Pr., AE 541 or departmental approval. Derivation of equations of motion for variable-mass and flexible flight vehicles; small-disturbance theory and the linearized solutions of the general equations of unsteady motions, aerodynamic derivatives, derivatives analysis, aerodynamic transfer functions, dynamic stability of uncontrolled longitudinal and lateral motions.
631. HANDLING QUALITIES OF FLIGHT VEHICLES (4). Pr., AE 334, 541 or departmental approval. Historical background; MIL-SPECS. Validation of handling qualities for conventional aircraft. Experimental techniques; crossover, Neal-Smith method, equivalent systems, MIL-STANDARD, requirements for new flight vehicles. Pilot handling techniques, helicopter handling qualities.
632. FLIGHT DYNAMICS OF HYPERVELOCITY VEHICLES (5). Pr., departmental approval. May be taken more than one quarter, not to exceed 15 hours. Flight dynamics of steady and unsteady flight at hypersonic speeds, great-circle and minor-circle flight, re-entry, stability derivatives in hypersonic flow. Linearization of equations is investigated; static stability problems of hypervelocity vehicles are discussed.

Aerospace Studies

633. ESTIMATION THEORY AND FILTERING (5). Pr., AE 533 or equivalent. Elements of orbit determination; least squares, minimum norm and minimum variance solutions; batch, sequential and extended sequential processors; filter divergence; state noise compensation algorithm; best linear unbiased estimates; observability concept, error sources and orbit accuracy.
634. OPTIMAL ORBIT DETERMINATION (3). Pr., AE 633 or equivalent. Estimation in the presence of unmodeled accelerations; nonlinear estimators; the multisatellite problem; orthogonal transformations, square root information filtering; ridge-type solutions for ill-conditioned problems; consider-covariance analysis.
635. OPTIMAL CONTROL OF AEROSPACE VEHICLES (5). Pr., AE 334, 542 or equivalent. Principles of optimization. Pontryagin's principle. Linear quadratic regulator. Observers, state estimation, LQG problem. Optimal output feedback. Synthesis of flight control systems.
636. MULTIVARIABLE CONTROL THEORY IN AEROSPACE SYSTEMS (5). Pr., AE 635, course in stochastic processes or equivalent. Modeling in model reduction, model following control, Eigenstructure assignment. The problem of feedback for uncertain systems. Singular value decomposition. Characterization of uncertainties. Robust control. LQG/LTR design procedure.
637. FUNDAMENTALS OF THE GLOBAL POSITIONING SYSTEM (4). Pr., AE 633 or equivalent or departmental approval. Principles of the Global Positioning System; GPS overview and historical development; pseudorange and carrier phase measurement types and codes; measurement corrections; position solutions using kinematic, dynamic and reduced dynamic techniques; applications of GPS measurements.
638. SPACECRAFT ATTITUDE DYNAMICS AND CONTROL (3). Pr., AE 630 or equivalent. Introduction to spacecraft attitude dynamics and control; environmental forces and torques; dynamics of free rigid bodies; effects of energy dissipation on externally torque-free attitude motion; dual-spin spacecraft dynamics, attitude control using thrusters, magnetic torques and reaction wheels.
639. CURRENT TOPICS IN SATELLITE REMOTE SENSING (4). Pr., departmental approval. May be taken more than one quarter as topics vary not to exceed eight credits. Topics in satellite remote sensing principles and techniques including active and passive instruments, data processing and geophysical parameter recovery algorithms.
640. ADVANCED ASTRODYNAMICS (5). Pr., AE 533 or departmental approval. May be taken more than one quarter, not to exceed 15 hours. Topics from indirect and direct methods of trajectory optimization, trajectory isolation techniques, special and general perturbation theories, oblate earth problem, three-body problem, spacecraft rotational motion, mission analysis methods and new research developments.
642. HELICOPTER DYNAMICS AND CONTROL (3). Pr., AE 536 or departmental approval. Methods of analysis and design applicable to rotary wing aircraft; theoretical basis of analysis of helicopter dynamics, stability and control.
690. SEMINAR (1). May be taken more than one quarter. Weekly lectures on current developments in aerospace sciences by staff members, graduate students and visiting scientists and engineers.
691. DIRECTED READING IN AEROSPACE ENGINEERING (CREDIT TO BE ARRANGED; NOT EXCEEDING 5 HOURS). May be taken more than one quarter.
698. AEROSPACE ENGINEERING PROJECT (3). Intended for students in the M.A.E. program. The project may be done on or off-campus. The nature of the project is to be determined by the student's major professor and is intended to be completed in a period of one quarter. Approval of the project and its final written report by the student's Advisory Committee is required.
699. RESEARCH AND THESIS (CREDIT TO BE ARRANGED.) May be taken more than one quarter.
799. RESEARCH AND DISSERTATION (CREDIT TO BE ARRANGED.) May be taken more than one quarter.

Aerospace Studies (AF)

Professor Rehm, *Head*

Assistant Professors Burgess, Smith and Terry

- 101-102-103. INTRODUCTION TO THE AIR FORCE TODAY (1-1-1). LEC. 1, LAB. 1. Survey course introducing students to the U.S. Air Force and Air Force ROTC. Topics include mission and organization of the Air Force, officership and professionalism, military customs, courtesies and communication skills. Leadership Laboratory is mandatory.
- 201-202-203. THE AIR FORCE WAY (1-1-1). LEC. 1, LAB. 1. Survey course to facilitate transition from Air Force ROTC cadet to candidate. Topics include Air Force heritage and leaders, quality Air Force, ethics and values, leadership, group leadership problems and continuing application of communication skills. Leadership Laboratory is mandatory.
- 301-302-303. AIR FORCE LEADERSHIP AND MANAGEMENT (3-3-3). LEC. 3, LAB. 1. Leadership and quality management fundamentals, professional knowledge, Air Force doctrine, leadership ethics and communications skills required of an Air Force junior officer. Case studies are used to exercise practical application. Leadership Laboratory is mandatory.
- 401-402-403. NATIONAL SECURITY AFFAIRS/PREPARATION FOR ACTIVE DUTY (3-3-3). LEC. 3, LAB. 1. The national security process, regional studies, advanced leadership ethics and Air Force doctrine. Emphasis on the military as a profession, officership, military justice, civilian control of the military, preparation for active duty and refining communication skills. Leadership Laboratory is mandatory.

LEADERSHIP LABORATORY. Topics in the first two years of the Leadership Laboratory include Air Force customs and courtesies, drill and ceremonies, issuing military commands and areas of opportunity available to commissioned officers. Topics in the last two years of the include planning and controlling of military activities of the cadet corps, preparation and presentation of briefings and other oral and written communications.

Agricultural Economics and Rural Sociology (AEC) (RSY)

Professors Johnson, *Head*, Adrian, Bailey, Clonts, Crews, Duffy, Dunkelberger, Evans, Hardy, Hatch, Howze, Kinnucan, Martin, Molnar, Novak, Prevatt, Strawn and Young
Alfa Eminent Scholar Taylor

Associate Professors Fowler, Goodman, Jolly, Nelson, Simpson and Traxler

AGRICULTURAL ECONOMICS (AEC)

202. AGRICULTURAL ECONOMICS I (5). Economic principles with emphasis toward microeconomic concepts relating to farm firms and agribusinesses. Credit not allowed in this course and EC 202.
203. AGRICULTURAL ECONOMICS II (5). Pr., AEC 202. Continuation of economic principles with emphasis on macroeconomy and orientation toward agricultural sector. Credit not allowed in this course and EC 203.
210. MICROCOMPUTER APPLICATIONS IN AGRICULTURE (3). LEC. 2, LAB. 2. Introduction of microcomputer technology: hardware including microprocessor, display, keyboard, data storage and retrieval, printer and communication options; software including languages, electronic spreadsheet, word processing, data-based management and programmed products; and interface with data source and processing systems. (Seating priority given to College of Agriculture students, then by class standing.)
301. AGRICULTURAL MARKETING (4). Pr., AEC 202 and 210 or equivalent. Principles and problems in marketing farm products. Analysis of marketing functions, services and costs; reducing costs and improving marketing efficiency. Marketing methods and distribution channels of major farm commodities. Market institutions and operation.
302. FARM RECORDS AND TAX MANAGEMENT (3). Types and uses of farm records and accounts with emphasis on analyzing records to improve net farm income. Interpretation of income tax regulations and preparation of farm tax returns with emphasis on tax management.
303. AGRICULTURAL COOPERATIVES (3). Principles and problems of organizing and operating farmers' cooperative buying and selling associations.
304. AGRICULTURAL FINANCE (4). Pr., AEC 202 and 210 or equivalents. Economic problems and policies in financing agriculture.
305. FARM APPRAISAL (3). Theory of land values; techniques on farm land and building appraisals for different purposes; relationships of land use, buildings, land titles, farm prices, taxes and interest rates to land values; evaluation of appraisal methods and forms currently in use.
307. AGRICULTURAL LAW (4). Legal environment of agriculture. Recognition of legal problems associated with property ownership, contracts, torts, financing, estate planning and environmental controls and restrictions.
399. AGRICULTURAL BUSINESS AND ECONOMICS INTERNSHIP (1-4). S/U ONLY. (MAY BE TAKEN FOR TOTAL OF 8 HRS.) Pr., departmental approval. To provide practical job experience under joint supervision of an employer and the department. Internships may be taken in a variety of agricultural business firms and agencies including finance, farm supply, production, marketing and sales and government agencies. Training will prepare student for career employment.
490. UNDERGRADUATE SEMINAR (1). LEC, 1. Pr., junior standing. Pass-fail basis. Current developments in Agricultural Economics; the role of Agricultural Economics in the general economy.
491. HONORS READING AND SPECIAL TOPICS (3-6). Pr., admission to University Honors Program and junior or senior standing. May be repeated for a maximum of six hours. Open only to students in the University Honors Program with the consent of the Honors Advisor. Topics of an undergraduate nature pertinent to agricultural economics.
492. HONORS THESIS (1-6). Pr., admission to University Honors Program and junior or senior standing. May be repeated for a maximum of six hours. Open only to students in the University Honors Program with the consent of the Honors Advisor. Individual student endeavor consisting of directed research and writing of honors thesis.
499. DIRECTED STUDIES IN AGRICULTURAL ECONOMICS (1-4). Pr., departmental approval, junior standing. Individualized work and study in consultation with faculty member on subject of mutual concern. May include directed readings, research, analysis of an employment experience or a combination. Employment experience with a variety of agribusinesses and agencies may serve as the focus.

ADVANCED UNDERGRADUATE AND GRADUATE

500. PRINCIPLES OF AGRIBUSINESS MANAGEMENT (5). Pr., AEC 202 and 210. Economics and business principles applied to agriculture, business formation, composing and analyzing financial statements, financial analysis and decision-making, functions of management, capital budgeting and investment decisions. Not for credit for AEC, EC or business majors.
501. FARM MANAGEMENT (5). Pr., EC 210 and EC 302 or equivalents. Principles of economics applied to agriculture, uses of farm records to improve management of the farm; developing enterprise budgets and use in preparing a profit-maximizing farm plan.
503. AGRICULTURAL PRICES (4). Pr., EC 302 or equivalent, MH 161 and MN 301, DMS 215 or equivalent. Principles and factors in the pricing process with special reference to agricultural products and markets. Functions of prices and principles of supply and demand in price determination. Introduction to statistical estimation of price and demand relations.
505. AGRICULTURAL POLICY (3). Pr., EC 302 or equivalent. Concepts, objectives and operation of public policies affecting agriculture. Development of agricultural policies in the United States.

509. RESOURCE ECONOMICS I (4). Pr., AEC 210 and EC 302 or equivalent. Primary economic and institutional factors affecting the use of natural resources. Supply, demand, future requirements and availability of natural resources plus institutional framework affecting and conditioning such use through property rights, zoning, taxation, etc.
510. AGRICULTURAL BUSINESS MANAGEMENT (5). Pr., AEC 202, 210, 304 and AC 212 or equivalents. Principles and problems in acquiring, organizing and operating successful agricultural businesses, capital requirements, factors affecting location and growth and measures of technical and economic efficiency in organization and operation; practices in buying, pricing and merchandising, management problems and policies in financing, personnel and public relations.
512. ECONOMIC ASPECTS OF WATER RESOURCES MANAGEMENT (4). Supply, demand and use of water resources including economic, legal and political dimensions. Economics of management of water resource use and conservation in terms of present and future supplies and needs. Public and private water resources will be considered.
530. WORLD AND U.S. AGRICULTURAL TRADE (4). Pr., EC 302 or equivalent. Theory and significance of international trade, world distribution of agricultural production and trade, important issues and policies, documentation, mechanics and influence of exchange rates.

COURSES FOR GRADUATE STUDENTS

600. ADVANCED AGRICULTURAL AND ENVIRONMENTAL POLICY (5). Pr., AEC 509 and 505 or 503. Farm problems and governmental actions taken to address these problems are discussed from historical, political and analytical viewpoints. Current policy issues and proposals affecting the U.S. agricultural and food sector are reviewed. Concepts from welfare economics and other procedures are used to evaluate costs and benefits of existing and proposed governmental programs and actions affecting agriculture, the environment and the consumer.
601. ADVANCED FARM MANAGEMENT (5). Advanced theory and application of farm management principles and economic concepts to agriculture. Organization, operation and management of various types of farms, Optimum utilization of available resources on individual farms.
602. ADVANCED AGRICULTURAL PRICES (5). Pr., AEC 503 and EC 502 or equivalent. Theoretical analysis of forces determining prices and income in the agricultural sector. Short-run and long-run adjustments of product and factor markets. Research methods and empirical findings relative to prices, price trends, price cycles and price structures.
603. RESOURCE ECONOMICS II (5). Pr., AEC 509 or equivalent. Analysis of institutional and economic factors affecting use of natural resources including economic feasibility/conservation, benefit-cost analysis, environmental controls and other interventions.
604. ADVANCED AGRICULTURAL FINANCE (5). Pr., AEC 304 or departmental approval. Basic theory and conceptual models including the capital asset pricing model and portfolio theory. Role of financial markets, financial intermediation and savings issues analyzed in a supply of funds context. Investment and valuation models will constitute the foundation of demand for funds analysis. Special issues, including risk and finance in a developing country context.
605. ADVANCED AGRICULTURAL MARKETING (5). Pr., EC 502. Theory of marketing with emphasis on its application to methods used and problems faced in marketing farm products. Objectives in agricultural marketing.
608. PRODUCTION ECONOMICS I (5). Pr., EC 502. Resource allocation and efficiency of production. Production and efficiency in the firm, between firms and between agriculture and other industries.
610. QUANTITATIVE RESEARCH TECHNIQUES IN AGRICULTURAL ECONOMICS (5). An introduction to basic quantitative techniques with emphasis on linear programming and its extensions. General theoretical background and associated computational procedures are used for presentation of each technique.
611. ECONOMIC DEVELOPMENT (5). Conceptual and empirical analysis of economic development with emphasis on the lesser developed areas and countries. Analysis of financial and technical aid to other countries and case studies of development problems will be incorporated.
620. ECONOMICS OF AQUACULTURE I (5). Pr., AEC 202 or equivalent. Theory and application of economic principles of production, marketing and consumption to aquaculture. Role of aquaculture in economic development with emphasis on international development.
625. ECONOMICS OF AQUACULTURE II (5). Pr., AEC 620 or departmental approval. Application of advanced economic theory and principles of production, marketing and consumption to aquaculture. Analysis of comparative role and competitive position of aquaculture in economic development and resource allocation.
659. STATISTICAL METHODS FOR BUSINESS AND ECONOMICS (5). Pr., MH 161 or equivalent, MN 301 or equivalent, AEC 202 or equivalent. Application of statistical methods and development, estimation and evaluation of models for analysis of business and economic issues.
670. RESEARCH METHODS IN AGRICULTURAL ECONOMICS (3).
680. SPECIAL PROBLEMS IN AGRICULTURAL ECONOMICS (CREDIT TO BE ARRANGED.)
690. SEMINAR (1-1-1). Fall, Winter, Spring.
699. RESEARCH AND THESIS (CREDIT TO BE ARRANGED.)
706. THEORY OF MARKETS (5). Pr., EC 602 and AEC 659. Microeconomic theory of consumer behavior and market exchange; examples of coverage include: Lancaster's characteristics theory, Becker's household production model, the structure-conduct-performance paradigm, transactions cost theory, game theory and economics of information.

709. PRODUCTION ECONOMICS II (5). Pr., AEC 608 or departmental approval. Firm-level economics problems are extended with emphasis on alternate models of the firm and techniques of analysis. Aggregate modeling of agricultural industry and production sector responses. Advantages, limitations and appropriate interaction of firm-level and aggregate production problems are studied and evaluated.
716. RESOURCE ECONOMICS III (5). Pr., AEC 603 or equivalent. Quantitative analysis of economic relationships related to natural resource and environmental problems. Economic framework includes dynamic efficiency of resource allocation and welfare analysis techniques. Property rights and resource policy, particularly involving environmental quality, will include consideration of legal ramifications and non-market values.
799. RESEARCH AND DISSERTATION (CREDIT TO BE ARRANGED.)

RURAL SOCIOLOGY (RSY)

220. STATISTICS (5). Pr., RSY 261 or SOC 201. Basic statistical concepts, measures and techniques used in sociological reports and research.
261. INTRODUCTION TO RURAL SOCIOLOGY (3). Basic sociological concepts and principles as applied to life in the rural community. Special attention given to the culture, social organization and social problems of rural people in the United States and in the South in particular. Credit not allowed in this course and SOC 201.
319. AGRICULTURE AND SOCIETY (5). Values and conflicts associated with technological and other changes in farming, rural communities and the food system.
362. COMMUNITY ORGANIZATION (4). General elective. Principles of community organization and effective citizenship. Survey of institutions, organizations and agencies interacting to meet community needs.
370. METHODS OF SOCIAL RESEARCH (5). Pr., RSY 261 or SOC 201. Principal methods of data collection and analysis in sociological research.
371. APPLIED RESEARCH METHODS AND PROGRAM EVALUATION (3). Basic social science research techniques used in needs assessment studies and program evaluations. Fundamentals of social surveys, field experiments, demographic analyses and applications, principles and strategies of evaluation. Credit not allowed in this course and in RSY or SOC 370.
490. SENIOR SEMINAR (1). Pr., senior standing, S/U grading only. Current developments in the social sciences as applied to agriculture and private/public agencies serving rural people.
498. DIRECTED FIELD EXPERIENCE (5). Structured involvement in an agency or organization serving rural counties and/or small communities under joint supervision of agency personnel and university faculty. Regular faculty-student conferences to discuss, evaluate and interpret experience.
499. DIRECTED STUDIES IN RURAL SOCIOLOGY (1-5). Pr., departmental approval, junior standing. Individualized work and study in consultation with faculty member on subject of mutual concern. May include directed readings, research, analysis of an employment experience or a combination. May be used to complement and expand on an employment experience.

ADVANCED UNDERGRADUATE AND GRADUATE

541. EXTENSION PROGRAMS AND METHODS (5). An in-depth consideration of extension orientation in adult and continuing education in U.S. and developing nations. The Cooperative Extension Service is analyzed as an educational institution. Fundamental steps in program development and evaluation.
561. RURAL SOCIOLOGY (5). Pr., RSY 261 or SOC 201. Theories and conceptual approaches to rurality. Rural-urban differences in demographic composition; occupational structure; attitudes and values of rural people; regional cultures; and the role of agriculture, mining, forestry, fishing, manufacturing and service industries in rural life with attention to the nature of change.
564. SOCIOLOGY OF COMMUNITY DEVELOPMENT (5). Pr., RSY 261 or SOC 201. Principles of applied social change at the community level in the U.S. citizen participation in community affairs, impacts of economic changes on small communities; role of networks, neighborhoods and local institutions in responding to community problems.
565. SOCIOLOGY OF NATURAL RESOURCES AND THE ENVIRONMENT (5). Overview of changing attitudes and institutional responses to the use and exploitation of natural resources. Conservation, preservation and pollution control are treated as three primary sources of environmental concern. Global trends in population growth, energy availability and environmental degradation are examined.

COURSES FOR GRADUATE STUDENTS

641. EXTENSION PROGRAMS AND METHODS (5). History and development of technical assistance to farmers, farm families and rural communities. Evolution of Land-Grant institutional complex on the U.S. Technology transfer models employed primarily in less-developed nations are considered, particularly farming system approaches and training and visit extension. Role of infrastructure and technical services in agricultural development.
661. RURAL SOCIOLOGY (5). Theories and conceptual approaches to rurality in international and domestic contexts. Rural-urban differences in demographic composition, occupational structure, attitudes and values of rural people and regional cultures. Changes in rural economy as source of social change. Rural services and institutions as determinants of the quality of life.
662. SOCIOLOGY OF COMMUNITY (5). Overview of theories, conceptual approaches and methods for studying communities. Addresses institutional and organizational differences associated with community size, community power and decision making and extra-local linkages to larger societal units.
663. POLITICAL ECONOMY OF DEVELOPMENT (5). Differing theoretical perspectives on societal development, with emphasis on the Third World. Emphasizes linkages between theory and development practice. Case studies of development in Latin America, Asia and Africa will be examined.

664. SOCIOLOGY OF COMMUNITY DEVELOPMENT (5). Pr., RSY 261 or equivalent. Principles of applied social changes and public participation in decision-making at the community level examined with reference to industrialized and non-industrialized nations. Social impact of economic and technological change.
665. SOCIOLOGY OF NATURAL RESOURCES AND THE ENVIRONMENT (5). Overview of societal responses to changes in availability, use and exploitation of natural resources. Conservation, preservation, pollution control and environmental movements in the U.S. are considered, as well as global trends in population growth, energy availability and environmental degradation.
670. RESEARCH METHODS IN SOCIOLOGY (5). Pr., RSY 370, equivalent or departmental approval. Problem identification, hypothesis development and empirical analysis. Quantitative and qualitative procedures for obtaining social data using surveys, direct observation and secondary sources.
680. SPECIAL PROBLEMS IN AGRICULTURAL ECONOMICS (CREDIT TO BE ARRANGED.)
699. RESEARCH AND THESIS (CREDIT TO BE ARRANGED.)

Agricultural Engineering (AN)

Professors Turnquist, *Head*, Curtis, Donald, Hill and Johnson
Associate Professors Flood, Koon, Ogburn, Rochester, Taylor, Tyson, Wilhoit and Yoo
Affiliate Professors Burt and Shafer
Affiliate Associate Professors Bailey and Raper
Affiliate Assistant Professors McDonald and Way

COURSES FOR ENGINEERS

101. INTRODUCTION TO AGRICULTURAL AND FOREST ENGINEERING (1). LEC. 1, LAB. 2. S/U graded. Winter. Perspectives on the agricultural and forest engineering profession. Creative design and the engineer's approach to problem solving. Introduction to the technical specialties of engineering for agriculture and forestry and career opportunities (same as FYE 101).
130. INTRODUCTION TO ENGINEERING DESIGN FOR BIOSYSTEMS (1). LAB. 3. Spring. A supervised engineering project to design components and/or systems to solve a real problem in an agricultural or forestry related industry. Open only to students classified as 01 or 02. (Same as FYE 130).
201. ENGINEERING PRINCIPLES IN BIOSYSTEMS (5). LEC. 4, LAB. 3. Pr., MH 161. Coreq., CSE 120. Fall. Engineering concepts and principles applied to agricultural and forest problems. Creativity and design. Unit operations of agricultural and forest engineering (same as FYE 201).
311. MOBILE EQUIPMENT DESIGN FUNDAMENTALS (4). LEC. 3, LAB. 3. Pr., EGR 201, 235, MH 265 and AN 201 or departmental approval. Winter. Basic engineering analysis, synthesis and design concepts applied to mobile field equipment and machines for agricultural, forestry and industrial use. Includes engine performance, power transmission, traction mechanics, mechanics of machines and machine-operator interface and safety. (same as FYE 311).
313. LAND AND WATER CONSERVATION ENGINEERING (3). LEC. 2, LAB. 3. Pr., AN/FYE 315. Spring. Rainfall-runoff relationships. Soil erosion and its prediction and control. Hydraulic structures and open channel flow. (Same as FYE 313).
315. PROCESS ENGINEERING FOR BIOSYSTEMS (5). LEC. 4, LAB. 3. Pr., AN/FYE 201, CE 310, EGR 201. Winter. Design principles and equipment selection for crop, food and feed storage, preservation and manufacturing. Thermal processing, curing, drying, refrigeration, materials handling, pumps, fans and storage processes. (Same as FYE 315).
316. ELECTRICAL SYSTEMS IN AGRICULTURE (4). LEC. 3, LAB. 3. Pr., AN/FYE 201, EE 302, 303. Spring. Application of electrical power, equipment and control devices to agricultural systems. Emphasis on safe and efficient power distribution, motor selection and performance and theory and performance of sensing and control devices.
317. ENVIRONMENTAL CONTROL FOR BIOSYSTEMS (3). LEC. 2, LAB. 3. Pr., AN/FYE 201, 315. Spring. Functional requirements and design of animal shelters, greenhouses and agricultural storage buildings. Emphasis on environmental control systems and energy management.
401. FOREST MACHINE DESIGN (3). LEC. 3. Pr., AN/FYE 311, EGR 207. Spring. Engineering analysis and design of forest machinery. Includes engineering characteristics of logs related to machine design, site preparation and planting equipment review, felling equipment design, loader kinematics, cable systems mechanics and machine reliability. (Same as FYE 401.)
402. FOREST TRANSPORTATION SYSTEMS DESIGN (3). LEC. 2, LAB. 3. Pr., FYE 304 and AN/FYE 313. Fall. Design of the forest transportation system including preconstruction planning, horizontal and vertical alignment, earthwork volume and distribution analysis and drainage control structures for the road network and specifications for the vehicles that will use the network. (Same as FYE 402.)
403. APPLIED STRUCTURAL ANALYSIS AND DESIGN (3). LEC. 2, LAB. 3. Pr., EGR 207. Fall. Analysis and design of structural systems of agriculture and forestry. (Same as FYE 403.)
414. IRRIGATION SYSTEM DESIGN (3). LEC. 2, LAB. 3. Pr., AN/FYE 313. Winter. Theory and design of irrigation systems. Emphasis on sprinkler and trickle systems, including solid set, traveler, center pivot and drip.
418. WASTE MANAGEMENT AND UTILIZATION SYSTEMS (4). LEC. 3, LAB 3. Pr., AN/FYE 201, 313, 315, CH 104, 104L, BI 101. Fall. Theory and design of physical and biological treatment and processing systems for livestock waste management and utilization. The established technologies of lagoons and land application systems and the emerging technologies of energy production and refeeding are covered.

430. ENGINEERING DESIGN FOR BIOSYSTEMS I (4). LEC. 3, LAB. 3. Pr., AN/FYE 403, senior standing, departmental approval. Winter. Design of equipment, structures and systems for food, feed, fiber, forest products and animal production and processing utilizing engineering principles. (Same as FYE 430.)
490. SPECIAL TOPICS (2-5). (CREDIT TO BE ARRANGED.) Pr., departmental approval. May be taken more than one quarter for a maximum of 10 quarter hours. (Same as FYE 490.)
491. HONORS READING AND SPECIAL TOPICS (3-6). Pr., admission to University Honors Program and junior or senior standing. May be repeated for a maximum of six hours. Open only to students in the University Honors Program with the consent of the Honors Advisor. Topics of an undergraduate nature pertinent to agricultural engineering.
492. HONORS THESIS (1-6). Pr., admission to University Honors Program and junior or senior standing. May be repeated for a maximum of six hours. Open only to students in the University Honors Program with the consent of the Honors Advisor. Individual student endeavor consisting of directed research and writing of honors thesis.

COURSES FOR NON-ENGINEERS

250. WEATHER, CLIMATE AND AGRICULTURE (4). LEC. 3, LAB. 3. An introduction to the elements of atmospheric science and how they combine to create variations in world climate. The relation of climate and climatic variation to agriculture with emphasis on the available sources of climatic information.
350. SOIL AND WATER TECHNOLOGY (4). LEC. 3, LAB. 3. Pr., MH 160. Fall. Technical application of soil and water resources management. Irrigation system planning and equipment selection.
351. AGRICULTURAL MACHINE FUNDAMENTALS (4). LEC. 3, LAB. 2. Pr., MH 160. Precision farming principles. Mechanics of operation, safety, use and adjustment of tillage, planting, pesticide application and harvesting machines. Laboratory includes machine familiarization, measurements and calibration. Machinery background is not required.
352. POWER UNIT FUNDAMENTALS (4). LEC. 3, LAB. 2. Pr., MH 160. Fundamentals of internal combustion engine operation; fuel, ignition, electrical, cooling, lubrication and hydraulic systems. Current trends in engines. Applications to lawn and leisure equipment, ag/forest power units, trucks and automobiles.
353. FARM BUILDINGS TECHNOLOGY (4). LEC. 4. Pr., MH 160. Winter. Selection of materials, methods of construction, functional needs and control of environment of modern agricultural buildings.
354. AGRICULTURAL PROCESSING TECHNOLOGY (4). LEC. 3, LAB. 3. Pr., MH 160. Agricultural processing systems: includes storing, drying, pelleting, mixing and automatic materials handling systems.
356. LANDSCAPE AND GOLF COURSE IRRIGATION (4). LEC. 3, LAB. 3. Pr., MH 160. Winter. Includes theory and design of landscape and golf course irrigation both sprinkle and trickle.
357. ENVIRONMENTAL QUALITY AND AGRICULTURE (4). LEC., 3, LAB. 3. Pr., CH 104, MH 160. Basic introduction to pollution, measurement, nutrient cycles in nature, point and non-point source pollution, treatment and utilization of animal wastes and energy recovery from agricultural residues.

ADVANCED UNDERGRADUATE AND GRADUATE

501. AGRICULTURAL POWER AND MACHINERY DESIGN (3). LEC. 2, LAB. 3. Pr., AN/FYE 311. Design of equipment and systems to apply engineering principles to solutions of agricultural power and machinery problems. Functional requirements, safety, reliability, service conditions, power measurement, useful life and creative design are combined to obtain designs for agricultural machine and power units.
503. SOIL AND WATER ENGINEERING II (3). LEC. 2, LAB. 3. Pr., AN/FYE 313 or departmental approval. Theory and design considerations of topics in irrigation, erosion, non-point source pollution, drainage or upstream flood control.
505. ELECTRICAL AND PROCESSING SYSTEMS DESIGN (3). LEC. 3. Pr., AN/FYE 315, AN 316. Design and layout of material handling systems, fundamental theory of particle movement, study of sensing and feedback systems to include automatic controls and servo-mechanisms.
507. AGRICULTURAL STRUCTURE DESIGN II (3). LEC. 3. Pr., AN/FYE 317, 403. Functional requirements and design of animal shelters and agricultural storage buildings.
509. HYDRAULIC CONTROL SYSTEMS (4). LEC. 3, LAB. 3. Pr., CE 310 or ME 340. Fall. Design and analysis of hydraulic systems. Application of sizing of hydraulic pumps, motors, valves and accessories for industrial and mobile systems. Laboratory emphasizes hands-on testing and functional analysis of components and systems, including measurement of pressure, flow and power. (Same as FYE 509.)
530. ENGINEERING DESIGN FOR BIOSYSTEMS II (4). LEC. 2, LAB. 6. Pr., AN/FYE 430 and departmental approval. Spring. A supervised engineering project to design components and/or systems to solve a real problem in an appropriate industry. Utilization of many engineering principles is required (Same as FYE 530).
555. PRINCIPLES OF FOOD ENGINEERING TECHNOLOGY (5). LEC. 4, LAB. 3. Pr., MH 160, PS 200. Engineering concepts and unit operations used in processing and handling of food products.
590. SPECIAL TOPICS (CREDIT TO BE ARRANGED.) (2-5). Pr., departmental approval. May be taken more than one quarter for a maximum of 10 quarter hours. (Same as FYE 590.)
593. PRACTICUM (1-5). MAY NOT EXCEED 10 HOURS CREDIT. NOT OPEN TO MAJORS IN AGRICULTURAL ENGINEERING. Provides students with experience in Agricultural Engineering Technology closely relating theory and practice, usually carried on simultaneously.

COURSES FOR GRADUATE STUDENTS

601. ADVANCED SMALL WATERSHED HYDROLOGY (4). Pr., AN 503, CE 512. Hydrograph synthesis, Mathematical modeling of runoff and streamflow. Probability analysis of hydrologic events. Design of upstream systems for flood and erosion control and water supply.

Agronomy and Soils

602. **ADVANCED FARM POWER AND MACHINERY** (5). Pr., AN 501. Principles of operation and analysis of design of basic machine elements, hydraulic systems and functional requirements of farm power units, agricultural machinery and materials of construction.
604. **AGRICULTURAL ENGINEERING PROBLEMS (CREDIT TO BE ARRANGED NOT TO EXCEED A TOTAL OF 5 HOURS)**. Special advanced engineering and design problems.
605. **SOIL DYNAMICS OF TILLAGE AND TRACTION** (3). Pr., CE 430 or AY 555 and departmental approval. Analyses and measurements of soil reactions, as affected by the physical properties of the soil when subjected to forces imposed by tillage implements and traction devices. Among the soil physical properties considered are shear, cohesion, adhesion, consolidation, plasticity and abrasion.
607. **ENGINEERING PRINCIPLES OF ANIMAL ENVIRONMENT** (3). LEC. 3. Pr., AN 507 or departmental approval. Design and analysis of environmental equipment and systems for control or modification of animal production. Emphasis on evaluation of environmental factors which influence total environment.
608. **SEMINAR (CREDIT TO BE ARRANGED)**. Reviews and discussions of research techniques, current scientific literature and recent developments in agricultural engineering research.
610. **BIOLOGICAL AND PHYSICAL SYSTEM ANALYSIS I** (3). Pr., MH 362. Mathematical analysis and computer modeling of biological and physical systems including the formulation of differential equations with analytical and numerical solution techniques. Solution by regression equations and by physical models. Decisions made under certainty, risk and uncertainty.
611. **SIMULATION METHODS IN ENGINEERING I** (3). LEC. 2, LAB. 3. Pr., departmental approval. Principles of dimensional analysis and similitude and their application to physical model design and testing. Use of structural, fluid flow, thermal and analog models as they pertain to biological and physical systems. Interdisciplinary applications.
612. **SIMULATION METHODS IN ENGINEERING II** (5). LEC. 5. Pr., departmental approval. Mathematical model development and computer simulation of biological and physical processes and systems. Model elements include biological, biochemical, physical, mechanical and statistical parameters for continuous and discrete simulation models. Interdisciplinary applications.
650. **WATER MANAGEMENT IN AQUACULTURE** (4). LEC. 3, LAB. 3. Pr., FAA 626 or departmental approval. Analysis of water supply and delivery systems. Includes surface runoff, drainage, water measurement, hydraulic structures, ground water, pumps and pipe flow. Not for credit for engineering majors.
690. **SPECIAL TOPICS (CREDIT TO BE ARRANGED)** (2-5). Pr., departmental approval. May be taken more than one quarter for a maximum of 10 quarter hours. (Same as FYE 690.)
699. **RESEARCH AND THESIS (CREDIT TO BE ARRANGED)**.
799. **RESEARCH AND DISSERTATION (CREDIT TO BE ARRANGED)**.

Agriculture (AG)

380. **AGRICULTURAL LEADERSHIP DEVELOPMENT** (3). LEC. 2, LAB. 2. Pr., sophomore standing. Fall. Programmed sessions and activities designed to enhance self-awareness of leadership skills and enable students to become effective leadership practitioners.

Agronomy and Soils (AY)

Professors Touchton, Head, Ball, Bransby, Burdett, Dane, Everest, Guthrie, Hairston, Hartzog, Hood, Mitchell, Mosjidis, Mullins, Patterson, Teem, Walker, Weaver and Wehtje

Associate Professors Adams, Mask, Odom, Shannon, Van Santen and Wood

Assistant Professors Entry, Guertal, Miller, Monks and Stoit

Affiliate Professors Chien, Reeves and Rogers

Affiliate Associate Professors Baskin, Edwards, Elkins and Sikora

Affiliate Assistant Professors Bostick, Prior and Torbert

Extension Specialists Burmester and Delaney

200. **BASIC CROP SCIENCE** (5). LEC. 4, LAB. 2. Fall, Winter. Basic agronomic principles involved in classification, growth, structure and soil-plant relationships of field crops. Emphasis is on the influence of man and environment on crop growth, and the local and global importance of crop production in world food production.
304. **GENERAL SOILS** (5). LEC. 4, LAB. 2. Pr., CH 105 and 105L or CH 207 or CH 203. Winter, Spring. Formation, classification, composition, properties, management, fertility and conservation of soils in relation to the growth of plants.
305. **GENERAL SOILS** (5). LEC. 4, LAB. 2. Pr., CH 103-104. Winter. Formation, classification, composition and properties of soils and their influence on vegetative growth and development on forest lands. Open only to students in forestry.
307. **GENERAL SOILS** (5). LEC. 4, LAB. 2. Pr., CH 103-104. Fall, Spring. The general field of soils including genesis, classifications and fertility.
310. **EARTH SCIENCE** (5). Materials of the earth; forces that shape and sculpture the earth's surface, including weathering, water, soil formation and erosion; soil geography; and historical geology. (Not to be substituted for AY 304, 305 and 307.)
312. **PRINCIPLES OF WEED SCIENCE** (5). LEC. 4, LAB. 2. Pr., BI 102 and CH 104. Fall. Weed identification and biology, methods of weed management and classification of herbicides and how they are used in weed control.

315. TURFGRASS MANAGEMENT (5). LEC. 4, LAB. 2. Pr., BI 102. Fall. The management of recreational and home area turfgrass will be studied and will include the establishment and maintenance of turf and the effect of light, traffic, soil fertility and water on its growth.
390. AGRONOMY AND SOILS INTERNSHIP (5). Pr., departmental approval. S/U graded. To provide the student with practical experience under the supervision of an approved employer and the department. Internship may be in the areas of production, business, turf or science.
399. PROBLEMS IN WEED SCIENCE (1). LEC. 1. Pr., departmental approval. Fall. Conferences, problems and assigned reading in weed science.
400. ADVANCED CROP PRODUCTION (5). LEC. 4, LAB. 2. Pr., AY 200 or BI 102 and either AY 304, 305 or 307. Winter. Application, expansion and integration of principles from undergraduate agricultural, biological and physical sciences courses in the management of crop production systems with emphasis on discussion and problem-solving.
401. PRINCIPLES OF FORAGE PRODUCTION (5). LEC. 4, LAB. 2. Pr., junior standing. Fall and Spring. Grass and legume forage crops. The crops are considered from the standpoint of (a) pasture crops, (b) hay and silage crops, (c) soil improving crops.
420. SOIL JUDGING (3). LEC. 1 LAB. 4. Pr., AY 304, 305 or 307. Fall. Description, evaluation and interpretation of soil profile characteristics.
422. FACTORS LIMITING CROP PRODUCTION (3). LEC. 3. Winter. Factors influencing the production of crops including climate, water, soils. The role of plant and animal pests and the limitations created by the attitudes and mores of people.
470. HONORS READING AND SPECIAL TOPICS (3-6). Pr., admission to University Honors Program and junior or senior standing. May be repeated for a maximum of six hours. Open only to students in the University Honors Program with the consent of the Honors Advisor. Topics of an undergraduate nature pertinent to agronomy.
471. HONORS THESIS (1-6). Pr., admission to University Honors Program and junior or senior standing. May be repeated for a maximum of six hours. Open only to students in the University Honors Program with the consent of the Honors Advisor. Individual student endeavor consisting of directed research and writing of honors thesis.
490. SENIOR SEMINAR (1). LEC. 1. Pr., junior standing. Winter. S/U graded. Current developments and the role of crop and soil sciences.
499. SPECIAL PROBLEMS (1-5) (CREDIT TO BE ARRANGED.) Pr., departmental approval, junior standing. Not open to graduate students. Students will work under the direction of a staff member on special problems in crop, soil or weed science.

ADVANCED UNDERGRADUATE AND GRADUATE

500. SOILS AND ENVIRONMENTAL QUALITY (4). LEC. 4. Pr., AY 304, 305 or 307. Spring. Role of soils in biogeochemical cycling of major elements and compounds of environmental concern; interactions of pollutants with soils and aquatic and atmospheric environments; methods to minimize or correct pollution; risk assessment.
502. SOIL FERTILITY (5). LEC. 5. Pr., AY 304, 305 or 307. Winter. Lectures, demonstrations and problems illustrate principles of soil fertility as related to fertilizer practices and crop production. An advanced course, required of all students majoring in Agronomy and Soils. Either AY 502 or AY 507, but not both, may be used to satisfy the minimum requirement for the Master's degree.
507. SOIL MANAGEMENT (5). LEC. 5. Pr., AY 304, 305 or 307. Summer. Physical, chemical and biological properties of soils and their management. Advanced course in Agricultural Education. Either AY 502 or 507, but not both, may be used to satisfy the minimum requirement for the Master's degree.
508. SOIL RESOURCES AND CONSERVATION (5). LEC. 4, LAB. 2. Pr., AY 304, 305 or 307. Fall. Soils as a natural resource for land-use planning; their classification and management for crop production, recreation and urban and industrial development.
509. SEED PRODUCTION (3). Pr., AY 400 or 401. Winter, odd years. Methods and factors affecting production, storage and processing seed.
510. METHODS OF PLANT BREEDING (5). LEC. 4, LAB. 2. Pr., ZY 300. Spring. Genetic principles related to crop improvement including modes of reproduction, qualitative vs. quantitative traits, role of environment and heritability. Breeding methods including pedigree selection, backcross and recurrent selection.
515. SOIL MORPHOLOGY (5). LEC. 4, LAB. 2. Pr., AY 304, 305 or 307. Spring. Physical, chemical and mineralogical properties of soils are studied in relation to their classification for engineering and agricultural uses.
516. ADVANCED TURFGRASS MANAGEMENT (5). Pr., AY 304, 315, BY 306. Fall, odd years. Factors affecting the grass plant as a component of a dynamic turf community. Influence of soil chemical and physical conditions, management practices and climate will be discussed. Both theoretical and practical aspects of turf cultural practices will be discussed along with design and construction of athletic turf areas.
517. CROP QUALITY (5) LEC. 5. Pr., AY 400 or 401. Spring. Quality of food, feed and fiber crops are regulated by genetic potentials, environment, management and utilization.
519. SOIL INTERPRETATIONS FOR PLANNING (5). Pr., departmental approval. Characteristics that significantly affect soil response under various uses. (Not open to students in College of Agriculture or Agricultural Education.)
593. PRACTICUM (1-5). (MAY BE REPEATED NOT TO EXCEED 10 HOURS CREDIT.) Not open to majors in Agronomy and Soils. Provides students with experience in Agronomy and Soils closely relating theory and practice, usually carried on simultaneously.

COURSES FOR GRADUATE STUDENTS

601. AGRONOMY PROBLEMS (1-5). (CREDIT TO BE ARRANGED.) Conferences, problems and assigned reading in soils and crops, including results of agronomic research from the substations and experiment fields.
606. SOIL MICROBIOLOGY (5). LEC. 3, LAB. 4. Pr., AY 502, BY 300. Spring, odd years. Soil microorganisms and their physiological processes related to soil development and plant nutrition. The role of microorganisms affecting the chemical and physical properties of soils will be studied, with emphasis on the cyclical transformations of nitrogen, phosphorus, carbon and sulfur.
607. ADVANCED SOIL MICROBIOLOGICAL TECHNIQUES (3). Pr., AY 606. Advanced laboratory procedures to determine soil microbial genetic and functional diversity to quantify, isolate and identify microorganisms from agricultural, forest and wetland soils.
608. EXPERIMENTAL METHODS (5). Fall, even years. Experimentation in the agricultural sciences including experimental techniques, interpretation of research data, use of library references and preparation of publications. Consists of problems, assigned readings and lectures.
612. CYTOLOGY AND CYTOGENETICS (5). LEC. 3, LAB. 4. Pr., ZY 300. Fall, odd years. Cell structure and function with emphasis on cell reproduction and factors contributing to the evolution of organism.
614. CHEMISTRY AND USE OF HERBICIDES IN CROP PRODUCTION (5). LEC. 4, LAB. 2. Pr., CH 104. Fall. Principles and use of herbicides in agronomic crops. Acquaints the students with methods of application including equipment, time of application, methods of incorporation and formulation of herbicides. The fate of herbicides in soil and the ecological impact on succeeding plant species.
615. SEMINAR IN GENETICS (1). Pr., ZY 300. Reports will be presented by students and staff members on current research and the literature in the field of genetics.
616. ADVANCED PLANT BREEDING (5). Pr., ZY 300, DMS 501. Spring, even years. Estimation and interpretation of genetic variance components, heritability, selection response, yield stability indices and their effect on choice of breeding method. Other topics include recurrent selection theory and breeding for resistance to plant stresses.
617. THEORETICAL PLANT BREEDING (5). Pr., AY 510 and DMS 601. Winter, even years. Several aspects of genetical theory will be considered. Emphasis will be given to the application of quantitative methods to experimental populations used to plan breeding programs.
618. CROP ECOLOGY (5). Pr., BY 306 or AY 304. Winter, even years. Analysis of structure and function of crop and pasture farming systems. Integrative approach with emphasis on systems, concepts, production processes and resource management. Topics include current trends in population growth and food supply, views and problems of technology in agriculture.
619. ADVANCED FORAGE CROPS MANAGEMENT (5). LEC. 3, LAB. 4. Pr., AY 401 and BY 306 or ADS 200. Winter, odd years. Principles involved in successful establishment, maintenance and management of crops used for grazing, hay and silage. Several field trips will be made to research stations and private farms to observe management practices.
625. CROP PHYSIOLOGY (5). LEC. 4, LAB. 2. Pr., BY 306, CH 208. Winter, odd years. Principles of plant physiology as related to crop yield. Current crop physiological research discussed, emphasizing methods of investigation and interpretation of results.
626. SPATIAL STATISTICAL METHODS IN AGRONOMY (3). Pr., DMS 501 or equivalent. Principles and techniques involved in the description and estimation of spatial data. Emphasis on methods used to describe the spatial behavior of variables. (Cross listed with DMS 626)
630. SOIL CHEMISTRY (5). LEC. 3, LAB. 4. Pr., AY 304, 305 or 307. Winter. An introduction to the basic soil chemical properties of mineral composition, weathering, absorption, cation exchange, acidity, alkalinity, salinity and soil reactions with fertilizers, pesticides and heavy metals.
654. PRINCIPLES OF PLANT NUTRITION (5). Pr., AY 502. Spring, even years. Processes of nutrient flux to plant roots growing in soil. Chemistry and properties of soils in relation to the nutrition and growth of plants.
655. SOIL AND PLANT ANALYSIS (5). LEC. 2, LAB. 6. Pr., CH 305, AY 502. Winter. Principles, methods and techniques of quantitative chemical analysis of soils and plants applicable to soil science.
656. SOIL CLAY MINERALOGY (5). LEC. 4, LAB. 2. Fall, even years. Crystal structure and properties of the important clay size minerals of soils and clay deposits combined with identification techniques involving x-ray diffraction and spectroscopy, differential thermal analysis, electron microscopy, specific surface analysis and infrared absorption.
659. SOIL PHYSICS (5). Pr., AY 304. Fall. Lectures, laboratory exercises and demonstrations to illustrate fundamental physical properties of soils. Introduction to flow and transport phenomena through soils.
690. SEMINAR (1). Fall and Winter. Required of all graduate students in Agronomy & Soils. May be repeated for credit.
699. RESEARCH AND THESIS (CREDIT TO BE ARRANGED.) Research and thesis on problems in the soil and crop sciences.
757. PHYSICAL SOIL CHEMISTRY (5). Pr., CH 507 and AY 630. Fall, odd years. Interpretation of soil properties and chemical reactions in terms of ion exchange, solubility diagrams, solutions equilibria, electrochemistry and electrokinetics of charged particles.
758. ADVANCED SOIL PHYSICS (5). Pr., MH 193, PS 206, AY 659. Winter, even years. Transport phenomena in soils. Physical principles and analysis of the storage and movement of water, solutes, heat and gases in soils.
799. RESEARCH AND DISSERTATION (CREDIT TO BE ARRANGED.)

Animal and Dairy Sciences (ADS)

Professors Bergen, *Head*, Cummins, Frobish, Jones, Kuhlers, McCaskey, Moss,
Muntifering, Parks and Schmidt

Associate Professors Bartol, Chiba, Coleman, Davenport, Floyd, Gimenez, McCall, Mikel,
Mulvaney, Owsley, Rahe, Rankins and Van Dyke

Assistant Professors Blaylock, Kriese, E. Loneragan, S. Loneragan and Payne

110. ORIENTATION TO ANIMAL AND DAIRY SCIENCE (1). LEC. 1. Fall. S/U only. An introduction to the departmental programs and personnel. Job opportunities for the individual trained in Animal Science.
200. INTRODUCTORY ANIMAL & DAIRY SCIENCES (5). LEC. 4, LAB. 2. Fall, Spring. The importance of livestock to agriculture and to the nutrition of people. Livestock terminology, selection, reproduction, nutrition, management, marketing and species characteristics of beef cattle, swine, sheep and horses.
202. PRACTICAL LIVESTOCK MANAGEMENT TECHNIQUES (2) LAB. 4. Pr., ADS 200. Fall, Winter, Spring. S/U only. Demonstration and practice of skills associated with animal care and management. Animal behavior patterns will be discussed and observed.
205. LIVESTOCK PROMOTION AND MERCHANDISING (2). LEC. 1. LAB. 4. Pr., ADS 200. Fall. Showing, fitting, public display, sales management and advertising as it relates to the promotion and merchandising of cattle, swine, sheep and horses.
206. INTRODUCTION TO HORSE MANAGEMENT AND TRAINING (3). LEC. 1, LAB. 4. Fall. An introduction to the management, training and enjoyment of horses.
210. COMPANION ANIMAL MANAGEMENT (2). LEC. 2. Winter. Practical aspects of behavior, nutrition, breeding, reproduction, health, economics and management of dogs, cats and other animals generally considered to be human companions.
270. COMMERCIAL MEAT MANAGEMENT (5). LEC. 4, LAB. 2. Spring. The importance of meat in the food service industry, including food safety, purchasing, cooking and meat in the diet. (Credit in ADS 370 precludes credit in ADS 270).
271. VALUE BASED ANALYSIS OF MEAT ANIMALS (4). LEC. 2, LAB. 4. Pr., ADS 200. Fall, Winter. Comparative evaluation of body composition and application of federal grading standards to determining relative value and price of live animals, carcasses and wholesale cuts.
315. HERD HEALTH MANAGEMENT (5). Pr., MB 300 and ZY 251 or equivalent. Spring. Prevention and control of the major diseases of farm animals and development of herd health programs.
321. ANIMAL BIOCHEMISTRY AND NUTRITION (5). LEC. 5. Pr., CH 104, 203 or equivalent, BI 103. Fall, Winter. Principles of animal nutrition, biochemistry. Nutrients and their utilization by animals.
322. FEEDS AND FEEDING (4). LEC. 3, LAB. 2. Pr., ADS 321 or departmental approval. Winter, Spring. Characteristics of feedstuffs and general comments about their processing. Principles and practices of balancing and compounding of rations for beef and dairy cattle, horses, sheep, swine and pets.
330. INTRODUCTORY LIVESTOCK EVALUATION AND MARKETING (3). LAB. 6. Pr., ADS 271. Winter. Comprehensive study of live animal and carcass evaluation techniques used in selection and marketing of beef cattle, swine and sheep. The development of oral communication skills are emphasized.
331. INTRODUCTORY MEAT SELECTION AND GRADING (2). LEC. 1, LAB. 4. Pr., ADS 271. Fall. Development of grading standards and application of federal grades to beef, pork and lamb carcasses, comparative evaluation of carcasses and the wholesale cuts. Some labs in nearby processing plants.
333. DAIRY CATTLE JUDGING (3). LAB. 6. Pr., ADS 200. Spring. Theory and practice in the selection of dairy cattle.
335. HORSE EVALUATION AND JUDGING (2). LAB. 4. Pr., ADS 200 and 206 or departmental approval. Spring. Fundamental principles of horse evaluation and judging with emphasis on visual and conformational traits associated with success in various competitive equestrian events.
350. ANIMAL BREEDING (4). LEC. 3, LAB. 2. Pr., ZY 300. Winter. Application of population genetics to the improvement of cattle, sheep and swine. Studies of different systems of selection and mating and their related efficiencies for livestock improvement.
351. LIVESTOCK SELECTION (4). LEC. 2, LAB. 4. Pr., ADS 350. Spring. Theory and practice in the use of applied genetics principles, performance records and visual appraisal in the selection and breeding of beef cattle, dairy cattle and swine.
360. GROWTH AND DEVELOPMENT OF FARM ANIMALS (4). LEC. 3, LAB. 2. Pr., ADS 200, 271, BI 103. Spring. Biology of prenatal and postnatal growth of meat animals emphasizing muscle, adipose and bone tissues. Application of concepts to improve rate, efficiency and composition of growth.
361. REPRODUCTIVE PHYSIOLOGY (5). LEC. 4, LAB. 2. Pr., ZY 251 or equivalent and ZY 300 or equivalent. Fall. Comparative anatomy, physiology and endocrinology of animal reproduction and lactation: techniques involved in the artificial insemination and pregnancy testing of farm animals. Applications of these principles to improving the efficiency of livestock.
362. ARTIFICIAL INSEMINATION OF FARM ANIMALS (2). LEC. 1, LAB. 2. Pr., ADS 361. Spring. Principles and practice of techniques in artificial insemination and reproductive management of farm animals.
370. MEAT SCIENCE (4). LEC. 3, LAB. 2. Pr., ADS 271 or departmental approval. Winter, Spring. Fundamentals of slaughter, processing, storage and merchandising of meat and meat products. Biochemical and physiological implications of nutrition, breeding and antemortem treatment on meat quality, curing and processing.
380. UNDERGRADUATE SEMINAR (1). LEC. 1. Pr., junior standing. Winter. S/U only. Lectures and discussions on job opportunities by staff and guests.

401. BEEF PRODUCTION (4). LEC. 3, LAB. 2. Pr., ADS 271, 322, 350, 361 or departmental approval for non-majors only. Winter. Overview of the beef cattle industry. Develops modern concepts, ideas and methodology associated with the application of technology to the solution of problems related to reproduction, breeding, nutrition, management and use of facilities in a modern beef cattle enterprise.
403. DAIRY CATTLE PRODUCTION (4). LEC. 3, LAB. 2. Pr., ADS 271, 322, 350, 361 or departmental approval for non-majors only. Fall. Practical application and integration of nutrition, breeding, reproduction, selection, herd health, economics and management for efficient dairy production.
405. HORSE PRODUCTION (4). LEC. 3, LAB. 2. Pr., ADS 200, 322, 350, 361 or departmental approval for non-majors only. Spring. Practical application and integration of nutrition, breeding, reproduction, selection, herd health, economics and management for efficient horse production.
407. SWINE PRODUCTION (4). LEC. 3, LAB. 2. Pr., ADS 271, 322, 350, 361 or departmental approval for non-majors only. Fall. Practical application and integration of breeding and selection, nutrition, reproduction, selection, herd health, economics and management for efficient swine production.
409. SHEEP PRODUCTION (4). LEC. 3, LAB. 2. Pr., ADS 271, 322, 350, 361 or departmental approval for non-majors only. Winter. Application and integration of breeding and selection, nutrition, reproduction, health and marketing to achieve optimum lamb and wool production.
410. BEHAVIOR OF FARM ANIMALS (4). LEC. 3, LAB. 2. Pr., ADS 361 or departmental approval. Spring. Basic information on behavior, its purpose and how it is measured is followed by an examination of eating, locomotive, sexual, aggressive, territorial, maternal and resting behaviors in pigs, sheep, cattle and horses.
430. ADVANCED LIVESTOCK JUDGING (2). LAB. 6. Pr., ADS 330 or departmental approval. Spring, Fall. May be repeated for a maximum of four hours credit. An advanced course in the principles and techniques of grading and selecting livestock based on visual criteria plus performance information.
431. ADVANCED MEAT JUDGING (2). LAB. 6. Pr., ADS 271 or departmental approval. Winter, Fall. May be repeated for a maximum of four hours credit. Practice in evaluation and grading of beef, pork and lamb carcasses and cuts. Development of communication skills and exposure to animal agriculture through training in local meat packing plants and intercollegiate competition.
432. ADVANCED ANIMAL EVALUATION AND MARKETING (2). LAB. 4. Pr., ADS 430 or 431 or departmental approval. Winter, Spring. May be repeated for a maximum of four hours credit. Live slaughter animal and carcass evaluation techniques used in marketing cattle, sheep and swine.
433. ADVANCED DAIRY CATTLE JUDGING (3) LAB. 6. Pr., ADS 333 or departmental approval. Fall. Advanced course in the selection of dairy cattle.
470. MEAT PROCESSING (4). LEC. 3, LAB. 3. Pr., ADS 370. Fall. Principles of meat processing; portion control, restructured meat technology, curing reactions and sausage processing. Physical, sensory and biochemical properties of processed meat.
480. ISSUES IN ANIMAL AGRICULTURE (2). LAB. 4. Pr., junior standing, ADS 200, COM 100 or equivalent. Winter. Issues affecting animal agriculture, dealing with concerns of consumers and activists, involvement in public debate and the political process.
481. PROFESSIONAL DISCOURSE IN AGRICULTURE (1). LAB. 4. Pr., junior standing, COM 100 or equivalent, ADS 480, Methods for enhancing effective discourse concerning issues facing the livestock industry.
490. SPECIAL PROBLEMS (1-5). (CREDIT TO BE ARRANGED.) Pr., departmental approval, senior standing. Not open to graduate students. Students work under the direction of staff members on specific problems.
491. HONORS READING AND SPECIAL TOPICS (3-6). Pr., admission to University Honors Program and junior or senior standing. May be repeated for a maximum of six hours. Open only to Animal Science students in the University Honors Program with the consent of the Honors Advisor.
492. HONORS THESIS (1-6). Pr., admission to University Honors Program and junior or senior standing. May be repeated for a maximum of six hours. Open only to students in the University Honors Program with the consent of the Honors Advisor.
495. INTERNSHIP IN ANIMAL AND DAIRY SCIENCES (5-15). Pr., departmental approval. S/U only.

ADVANCED UNDERGRADUATE AND GRADUATE

507. ADVANCED SWINE MANAGEMENT (5). LEC. 3, LAB. 4. Pr., ADS 407, junior standing, departmental approval. Spring. Management techniques, facility design and operation of modern swine production systems.
508. ADVANCED BEEF PRODUCTION (5). LEC. 4, LAB. 2. Pr., ADS 271, 322, 401. Knowledge of ADS 520 and AEC 210 helpful. Spring, alternate years. Practical application and integration of nutrition, herd health, purchasing, marketing, economics and management of beef cattle in stocker and feedlot enterprises. Labs include animal handling, feedlot management techniques and use of computers for decision-making and program analysis.
520. ADVANCED ANIMAL NUTRITION (5). LEC. 4, LAB. 2. Pr., ADS 322, CH 207. Spring. Nutrition of farm animals; the integration of animal physiology and nutrient metabolism with applied feeding practices used in animal production; discussion of recent nutritional developments.
565. PHYSIOLOGY OF LACTATION (3). LEC. 3. Pr., ADS 220 and ZY 316. Fall. The mammary gland, its structure and functions including uptake of precursors and the synthesis and secretion of milk.
593. PRACTICUM (1-5). (MAY BE REPEATED NOT TO EXCEED 10 HOURS CREDIT.) Not open to majors in Animal and Dairy Sciences. Provides students with experiences that closely relate theory and practice.

COURSES FOR GRADUATE STUDENTS

618. BIOCHEMISTRY (5). LEC. 5. Pr., CH 208, Fall. Classification, structure and chemistry of the major chemical constituents of living matter.

Architecture

619. BIOCHEMISTRY (5). LEC. 5. Pr., ADS 618 or equivalent. Winter. Introduction to metabolism.
625. ADVANCED MONOGASTRIC NUTRITION (4). LEC. 4. Pr., ADS 619 and ZY 560 or departmental approval. Spring, odd years. Digestion and absorption, nutrient utilization, requirements and interrelationships in swine and other monogastric animals.
627. ADVANCED RUMINANT NUTRITION (4). LEC. 4. Pr., ZY 560 and ADS 619 or departmental approval. Spring, even years. Rumen fermentation and the biochemistry of ruminant metabolism.
628. NUTRITIONAL TOXICOLOGY (4). LEC. 4. Pr., graduate standing. Summer. General principles of nutrition and toxicology applied toward understanding and managing livestock responses to toxicants in feeds and plants.
644. TOPICS IN BIOCHEMISTRY (2-6). Pr., ADS 619 or equivalent, departmental approval.
645. BIOCHEMICAL RESEARCH TECHNIQUES (5). Pr., ADS 619 or equivalent. Summer. Modern biochemical laboratory techniques.
646. MICROBIAL BIOCHEMISTRY (5). Pr., ADS 619 or equivalent MB 300 or equivalent. Fall, odd years. The anatomy, growth and metabolism of the bacterial cell with emphasis on the biochemical makeup of the cell and the regulation of its activities.
650. EXPERIMENTAL METHODS (5). Pr., DMS 601. Spring, even years. Research methods used in the animal sciences for the analysis and interpretation of data. Included are experimental designs, experimental techniques and evaluation of research projects.
660. PHYSIOLOGY OF GROWTH (3). Pr., ADS 619 or departmental approval. Summer. Molecular and cellular basis of tissue differentiation, growth and development with emphasis on muscle, adipose and connective tissues. Major factors influencing gene expression during growth including genetic, endocrine, metabolic rate and growth regulators will be emphasized in discussions of current literature.
661. ADVANCED REPRODUCTIVE PHYSIOLOGY (5). Pr., ADS 361, ZY 524. Spring, even years. Physiology and endocrinology of reproduction.
671. ADVANCED MEAT SCIENCE (5). LEC. 5. Pr., ADS 370, ADS 619 or departmental approval. Winter, even years. Muscle microanatomy, biochemistry, chemistry of muscle proteins and lipids, lipid-protein interactions, microbiology, antemortem and postmortem factors affecting fresh and processed meat quality; discussion of current scientific literature.
680. SEMINAR (1). Pr., graduate standing. Fall, Winter, Spring. Intensive study of topics in a facet of animal sciences.
690. SPECIAL PROBLEMS (1-5). Fall, Winter, Spring, Summer. Conference problems, assigned reading, literature searches in one or more of the following major fields: (a) animal biochemistry and nutrition, (b) animal breeding and genetics, (c) meats, (d) microbiology and (e) physiology and physiology of reproduction.
699. RESEARCH AND THESIS (CREDIT TO BE ARRANGED.) Fall, Winter, Spring, Summer. Research and thesis, may be on technical laboratory problems or on problems directly related to beef and dairy cattle, sheep, swine or laboratory animals.
724. VITAMIN AND MINERAL METABOLISM (5). LEC. 5. Pr. ADS 619, ZY 560 or departmental approval. Winter, even years. Vitamin and mineral metabolism in the pig, cow and sheep. Emphasis on monogastric species.
725. PROTEIN AND ENERGY METABOLISM (5). LEC. 5. Pr., ADS 619, ZY 560 or departmental approval. Winter, odd years. Protein and energy metabolism in mammals with minor coverage for fish and poultry.
741. PROTEINS (5). Pr., ADS 619 or equivalent. Spring. Chemical and physical properties of amino acids and proteins, protein structures and the relation of protein structure to function.
742. LIPIDS (5). Pr., ADS 619 or equivalent. Fall, even years. Chemistry of lipids and their biological significance.
743. ENZYMES (5). Pr., ADS 619 or equivalent. Winter. Principles of enzyme chemistry, including the physical, chemical and catalytic properties of enzymes; classification of enzymes; and enzyme formation.
751. POPULATION GENETICS (5). Pr., ZY 300 or equivalent, DMS 601. Spring, odd years. Genetic composition, variation and factors that bring about change in populations.
752. ADVANCED ANIMAL BREEDING (5). Pr., ADS 751 and DMS 601. Fall, odd years. Statistical tools and methodology used in animal breeding theory and research. Criteria of selection, methods of selection, evaluation of breeds and application to the animal industry.
760. MUSCLE PHYSIOLOGY AND BIOCHEMISTRY (3). Pr., ADS 619, ZY 561 or departmental approval. Winter, odd years. Heterogeneity and plasticity of muscle as a tissue, ontogeny, differentiation, growth and regulation of metabolic and molecular properties of muscle fibers by innervation, usage, hormones and artificial modulation. Evaluation of current literature.
799. RESEARCH AND DISSERTATION (CREDIT TO BE ARRANGED.)

Architecture (AR)

Professors Robinson, Head, Faust, Gwin, Mockbee, Morgan, Orgen, Regan, Ruth and Zorr
Associate Professors Braly, Burleson, Cook, Finn, Garmaz, Nakhjavan, Setzer
Assistant Professor Pratt
Instructors Hudgens, Keown and Pyron

ARCHITECTURE PROGRAM (AR)

100. INTRODUCTION TO CAREERS IN DESIGN AND CONSTRUCTION (3). Issues involved in the environmental design and construction professions and the nature of commitment to curricula in this field. Open to all students. Graded S/U.

101. BASIC DESIGN (5) LEC. 2, STUDIO 8. Pr., acceptance into AR, ID or LA curriculum. Observing and understanding natural and built environments. Fundamental principles, methods and media of design.
102. BASIC DESIGN (5) LEC. 2, STUDIO 8. The conception and representation of ideas and the invention of form, with an emphasis on understanding materials.
103. BASIC DESIGN (5) LEC. 2, STUDIO 8. The detail and the fragment as basic components of, and analogues for, inventions in natural and built environments.
105. FREEHAND DRAWING (1). Pr., acceptance to AR, ID, LA curriculum.
106. PROJECTIVE GEOMETRY/ORTHOGRAPHIC (1). Pr., acceptance to AR, ID, LA curriculum.
107. AXONOMETRIC/OBLIQUE PROJECTION (1). Pr., acceptance to AR, ID, LA curriculum.
- 201-202-203. ARCHITECTURAL DESIGN (5-5-5) LEC. 2-2-2, STUDIO. 10-10-10. Pr., AR 103, MH 161, EH 110. Human needs are examined as the primary influences on the making of interior and exterior space, architectural form and physical function. Lectures emphasize architectural methodology, contextualism and structure parallel studio projects.
230. MATERIALS AND METHODS OF CONSTRUCTION (3). Pr., AR 103. Introduction to materials and methods of construction and their integration in basic building types. Emphasis on wood and masonry.
231. SYSTEMS AND CONSTRUCTION TECHNOLOGY (3). Pr., AR 230. Advanced materials and methods of construction with emphasis on steel and concrete.
260. APPRECIATION OF ARCHITECTURE (3). General elective. Pr., 2nd year standing. Architectural development with particular attention to American and contemporary examples. Illustrated lectures, reading, essays.
270. HISTORY AND THEORY OF ARCHITECTURE – INTRODUCTION (5). Pr., AR 202, 206. Building, landscape architecture, urbanism and professional practice in the Southeastern United States within the history of philosophy, science and the applied and social sciences.
300. ARCHITECTURAL/INTERIOR DESIGN (6). LEC. 2, STUDIO 12. Pr., AR 203, 270, PS 206. ID/AR dual degree studio component. Builds on the considerations of third-year architectural studios with emphasis on interrelationship between architectural form, systems and interior space. ID/AR dual degree students take AR 300 one quarter only in lieu of AR 301, 302 or 303.
- 301-302-303. ARCHITECTURAL DESIGN (6-6-6). LEC. 2-2-2, STUDIO. 12-12-12. Pr., AR 203, 270, PS 206. Theoretical, cultural and environmental issues are posed for consideration in the analysis of architectural design problems of moderate complexity. Lectures emphasize the relationship between conceptual aspects of architectural form and technical systems of building parallel studio projects. Enrollment is limited in third year sequence as determined by the Department of Architecture.
320. PHOTOGRAPHY I (3). Pr., Open to AR, BSC, ID, DSN & LA only, departmental approval. An exploration of the 35MM SLR camera in black and white photography for personal expression and as a tool for design.
321. PHOTOGRAPHY II (3). Pr., AR 320, departmental approval. Development of individual photographic skills and insights into understanding of surroundings.
371. HISTORY AND THEORY OF ARCHITECTURE – EUROPEAN ANTECEDENTS (3). Pr., AR 203, 207, 270. European traditions and theories of building and town design are surveyed utilizing historiographical and taxonomical norms created by the industrial democracies.
372. HISTORY AND THEORY OF ARCHITECTURE SINCE 1750 (5). Pr., AR 301, 371. Building and town design in Europe and the Americas are investigated.
400. ARCHITECTURAL/INTERIOR DESIGN (6). LEC. 2, STUDIO 12. Pr., completion of third-year ID/AR design sequence. ID/AR dual degree studio component. Builds on the considerations of fourth-year architectural studios with emphasis on design of the public realm, public and private spaces in urban environments and adaptive re-use. ID/AR dual degree students take AR 400 one quarter only in lieu of AR 401, 402 or 403.
401. ARCHITECTURAL DESIGN (6). LEC. 2, STUDIO. 12. Pr., AR 303. Architecture and the urban condition is the primary theme in the design of buildings and spaces. Lectures emphasize urban issues, research methods, analysis and programming parallel studio projects of increasing complexity.
402. ARCHITECTURAL DESIGN (6). LEC. 2, STUDIO. 12. Pr., AR 401, BSC 315. Emphasis is on architectural design at a community scale. Lectures are conceived to facilitate the application of principles, techniques and research methods introduced in the prerequisite planning courses.
403. ARCHITECTURAL DESIGN (6). LEC. 2, STUDIO. 12. Pr., AR 402. Consideration given to architectural problems of advanced complexity, having significant impact on the urban environment. Lectures focus on contextual analysis, zoning, codes and programming.
430. FIELD PRACTICE (3). Pr., AR 303 and departmental approval. Students may obtain academic credit for participation in learning experiences of a practical nature outside the normal curricular offerings. S/U graded.
435. DESSEIN d' ARCHITECTURE (3). Pr., 3rd year standing. Explorations in the art of representation. Complete descriptions of specific courses and their prerequisites are available from the department. Students are required to take two of the various courses offered.
469. LIGHTING (3). LEC. 1, LAB 2. Pr., 3rd year standing. An introduction to lighting, principles and techniques as applied to design in architecture and interior design.
495. SPECIAL PROBLEMS. (CREDIT TO BE ARRANGED UP TO 5 HRS.) Pr., 3rd year standing. Development of an area of special interest through independent study. May be a group or team effort under direction of the faculty and with prior approval of the head of the department. Evaluation of the work may be by faculty jury. May be taken more than one quarter. Maximum credit of 15 hours.

501. ARCHITECTURAL DESIGN (6-6). LEC. 2. STUDIO. 12-12. Pr., AR 403, EH 400. A synthesis of the previous design experiences is stressed through advanced theoretical and problem-solving processes. Lectures and discussions on architectural expression and professional concerns parallel studio projects emphasizing detailing as well as overall building design. S/U graded.
502. THESIS/TERMINAL PROJECT (6). Pr., AR 501.
503. THESIS/TERMINAL PROJECT (8). LEC. 2. STUDIO. 16. Pr. AR 502, 598. Thorough development of an architectural position is explored through a design problem of the student's own choosing, under the direction of the Thesis Committee and advisor(s). Lectures and discussions parallel student's work in the preparation of architectural drawings, models, details and a written text. S/U graded.
551. SEMINARS IN METHODS AND PROCESS (3). Pr., 201, 202, 203. The tools and techniques available to the design professional. Descriptions of specific seminars are available from the department.
552. SEMINARS IN CONTEMPORARY ISSUES (3). Pr., 201, 202, 203. Investigation of significant topics and issues that present opportunities and constraints to architectural thought and practice. Descriptions of specific seminars available from the department.
553. SEMINARS IN INTERDISCIPLINARY STUDIES (3). Pr., 201, 202, 203. Various disciplines that impinge upon the design of buildings, including natural and social sciences, technology and humanistic studies. Descriptions of specific seminars available from the department.
556. SEMINARS IN HISTORICAL PERSPECTIVES (3). Pr., 201, 202, 203. Theories, schools or periods with the intent of expanding awareness of critical attitudes toward both the potentials and limitations of architecture. Individual seminars will range from ancient to post-modern architecture. Descriptions of specific seminars available from the department.
557. SEMINARS IN ASPECTS OF DESIGN (3). Pr., 201, 202, 203. Detailed aspects of architectural design, such as form, space, style, meaning, imagery or cultural context, with the intent of developing theoretical and analytical habits of thought. Descriptions of specific seminars available from the department.
558. SEMINARS IN DISCIPLINES OF ENVIRONMENTAL DESIGN (3). Pr., 201, 202, 203. Related design fields to broaden appreciation of the range of concerns of the design professional. Descriptions of specific seminars available from the department.
- 571-572. PROFESSIONAL PRACTICE (3-3). Pr., 4th year standing. Procedure in architectural practice; construction methods, estimation of quantities and costs. Office organization; legal requirements; professional organizations and relations; civic responsibility, professional ethics.
597. INTRODUCTION TO THESIS RESEARCH (3). Pr., AR 403. Architectural research including the selection of a thesis and thesis project and the initial development of a thesis paper. S/U Option.
598. THESIS RESEARCH (WR) (2). Pr., AR 597. Coreq., AR 502. The development of a comprehensive architectural thesis and research paper including thesis discussion, programming site information and case studies. S/U Option.
599. THESIS RESEARCH (WR) (1). Pr., AR 598. Coreq., AR 503. The finalization and resolution of the issues investigated in AR 502, 503 and 598. S/U Option.

COMMUNITY PLANNING (CP)

Professor Morgan, Robinson and Williams
Visiting Professor Juster
Associate Professors Pittari and Setzer
Visiting Associate Professor Kenworthy

ADVANCED UNDERGRADUATE AND GRADUATE

501. URBAN PLANNING AND DESIGN (5). Examination of urban planning and design that shapes the three-dimensional form, character, growth, development and revitalization of cities, with focus on the role of planners and urban designers within the complex processes that shape cities and urban regions.
521. MICROCOMPUTERS IN PLANNING (3). Microcomputer applications in planning, including data base management, spreadsheets, computer-aided mapping and geographic information systems.
522. PLANNING AND ENVIRONMENTAL PERCEPTION (3). Pr., departmental approval. Analysis of human perception of the cultural, social and natural environments; the impacts of landscape alteration and their mitigation.
524. REAL ESTATE DEVELOPMENT (5). Pr., departmental approval. Survey and analysis of the financial, legal, administrative, planning and design factors influencing the process of real estate development from the perspectives of developers, planners and consumers.
525. HISTORIC PRESERVATION PLANNING (5). Pr., departmental approval. Planning for the preservation, restoration, conservation and adaptive reuse of historic buildings and sites within the comprehensive planning process.
527. DOWNTOWN REVITALIZATION (5). Pr., departmental approval. Goals, principles, strategies and programs for restoring and revitalizing downtown areas with particular emphasis on physical building and reuse activities and their relationships to fiscal, administrative and private sector organization.
535. CURRENT PLANNING ISSUES (3). Pr., departmental approval. Seminar examining topical issues in the fields of urban and regional planning.
541. PRESERVATION RESEARCH AND DOCUMENTATION (5). Research and documentation for production of field measured drawings of historic structures to standards of the Historic American Buildings Survey.

545. RURAL AND COMMUNITY PLANNING (3). Pr., departmental approval. The nature of rural areas and communities, the perspective, responsibility and performance of the planning professional and a critical appraisal of regional and community plans.
564. SITE PLANNING (5). Pr., departmental approval. Introduction to the art of site planning, an exposition of its principles and application of its techniques with both large and small scale projects.
575. URBAN DESIGN METHODS AND PROCESSES (3). Pr., CP 576. Techniques and methodologies in urban design problem solving and strategies for implementation.
576. HISTORY AND THEORY OF URBAN DESIGN (3). Pr., AR 372. Coreq., AR 303 or graduate status. Physical development of cities and the forces that design, shape, build and redevelop them.

COURSES FOR GRADUATE STUDENTS

601. HISTORY AND THEORY OF PLANNING (5). Pr., departmental approval. Historical development of cities and regions with emphasis on the interaction of their dynamic and structural elements; impact of the planning process and planner on public policy and private decision-making; ethics, responsibility and professional practice of planners.
- 603-604-605. PLANNING STUDIO (5-5-5). Application of the comprehensive planning process in individual and team activities to assist a client, community, agency, or organization in the solution of a community, county, or regional planning problem under faculty direction in cooperation with other professionals, public agencies and jurisdictions.
635. PLANNING RESEARCH AND METHODS (5). Pr., departmental approval. Introduction to methods useful in the comprehensive planning process, including population projections, migration, economic base, resource analysis and allocation, interrelationships between population and facilities/services needs and the use of land.
638. PLANNING MANAGEMENT AND IMPLEMENTATION (5). Programming public and private action to affect growth and development; policy formulation, information systems, taxation and capital improvement programming.
640. PLANNING LAW (5). Pr., departmental approval. The legal base for local government planning for and guiding development and conservation of land and other resources, including police powers and eminent domain, zoning, subdivision regulations, permit systems and administrative review.
650. INTERNSHIP (5). Off-campus experience under academic supervision in situations useful to the planning professional.
696. SPECIAL PROBLEMS IN PLANNING (1-5). Pr., departmental approval. Directed study in an area of special interest. Topic and credit to be arranged with advisor and approved by the director. May be repeated for a maximum of 10 quarter hours credit.
698. PLANNING SYNTHESIS (5). Pr., departmental approval following satisfactory completion of oral examination. Demonstration of planning competence by production of an original work in planning, to include integration of knowledge from previous courses and experience in a proposed solution to a complex planning problem or project. The emphasis will link the student's area of specialization and the comprehensive planning process.

INTERIOR DESIGN (ID)

Professor Blackwell

Associate Professor Schumacher

Instructor Epperson

215. ELEMENTS OF INTERIOR DESIGN (3). Pr., AR 103. The profession of interior design including basic theory of interior design principles, aesthetics and design concepts. Lectures, reading and discussions.
216. ELEMENTS OF INTERIOR DESIGN (3). Pr., AR 103. Graphic drawing of interior spaces and related architectural design solutions to develop.
217. ELEMENTS OF INTERIOR DESIGN (3). Pr., AR 103. Basic drafting techniques and skills in relation to architectural working drawings required in the construction of interior spaces and equipment.
- 301-302-303. INTERIOR DESIGN (6-6-6). LEC. 2-2-2, STUDIO 10-10-10. Pr., AR 203. Admission upon recommendation of the Committee on Design. Analysis and solution of interiors of moderate complexity, with emphasis on domestic and commercial problems. Research, discussion, drawings, models.
- 365-366. HISTORY AND THEORY OF INTERIOR DESIGN (3-3). Pr. or coreq., AR 270. The development of interior spaces, furniture, fabrics and accessories from pre-Renaissance to 1900. Illustrated lectures, readings, reports and field trips.
367. 20TH CENTURY INTERIOR DESIGN (WR) (3). Pr., ID 366. Fundamental aspects of interior design, spatial order and characteristics, furniture and fabric design from 1900 to date. Illustrated lecture, readings, reports.
368. HISTORY AND THEORY OF INTERIOR DESIGN (5). Pr. or Coreq., AR 372. Historic development of interior spaces, furniture and accessories as they relate to contemporary design principles. Fundamental aspects of interior design and spatial order. Illustrated lecture, readings, reports, field trips.
- 401-402. INTERIOR DESIGN (6-6). LEC. 2-2, STUDIO. 10-10. Pr., ID 303. Admission upon recommendation of the Committee on Design. Analysis and solution of interiors of advanced complexity, with emphasis on institutional and public problems. Research, discussions, drawings, models.
403. INTERIOR DESIGN THESIS (7). LEC. 2, STUDIO 14. Pr., ID 402 or completion of fourth-year ID/AR studio sequence. Development of a major design problem under the direction of the Committee on Design. Drawings, models, details; oral presentation for jury consideration.

Art

408. INTERIOR DESIGN RESEARCH (WR) (2). LEC. 1. STUDIO 3. Coreq., ID 402. Selection and comprehensive programming of a terminal interior design problem to be executed in ID 403.
- 441-442-443. PROFESSIONAL PRACTICE (3-3-3). LEC. 1-1-1. STUDIO 3-3-3. Office procedure and methods for interior designers; the techniques and execution of working drawings for buildings, cabinetry and interior details; specification. Discussions, drawings, inspections, reports.
445. PROFESSIONAL PRACTICE OF INTERIOR DESIGN (5). LEC. 3. STUDIO 2. Pr., AR 571. Professional practice procedure and methods for interior designers; the techniques and execution of working drawings for buildings, cabinetry and interior details; specifications. Discussions, drawings, inspections, reports.

LANDSCAPE ARCHITECTURE (LA)

Professor Williams

Associate Professors Bothwell and LaHaie

Visiting Associate Professor Kenworthy

Assistant Professor Sack

- 261-262. HISTORY OF LANDSCAPE ARCHITECTURE I-II (3-3). Historical analysis of man's progress in designing land and outdoor space from ancient times to the present.
- 301-302-303. BASIC LANDSCAPE ARCHITECTURAL DESIGN (6-6-6). LEC. 2-2-2. STUDIO 10-10-10. Pr., AR 203, HF 222, 223, 231. Coreq., BSC 324. Third-year design studio, emphasizing research, planning and design problems at neighborhood to community scales.
322. HISTORY OF EUROPEAN LANDSCAPE DESIGN (3). Pr., LA 262.
323. HISTORY OF AMERICAN LANDSCAPE DESIGN (3). Pr., LA 322.
- 341-342-343. LANDSCAPE ARCHITECTURAL CONSTRUCTION I-II-III (3-3-3). Pr., MH 160, 3rd year standing. LA 301 is coreq. for 341; LA 302 is coreq. for 342; LA 402 is coreq. for 343. Third-year sequence in principles, techniques and methodologies of site grading, drainage, materials, construction and systems design.
363. COMPUTERS IN LANDSCAPE ARCHITECTURE (3). Pr., CSE 100 or departmental approval. Introduces basic applications of computers to the landscape architectural profession. Emphasis on Autocad and Landscape software.
401. NATURAL SCIENCE STUDIO (6). LEC. 2. STUDIO 12. Pr., fourth-year standing in LA program and LA 303. Coreq., LA 435. Coordinated Natural Science Elective and ZY 306. Natural systems analysis as a basis for site planning and large scale facilities design. A group field trip is mandatory.
402. INTERMEDIATE LANDSCAPE DESIGN (6). LEC. 2. STUDIO 12. Pr., fourth-year standing in LA program and LA 303. Natural systems analysis as a basis for site planning and large scale facilities design. A group field trip is mandatory.
403. URBAN STUDIO (6). LEC. 2. STUDIO 12. Pr., fourth-year standing in LA program and LA 303. Natural systems analysis as a basis for site planning and large scale facilities design. A field trip is mandatory.
431. PLANTING DESIGN (5). Pr., HF 222, 223, 321, LA 301. A continuation of planting design incorporated in landscape design courses; emphasis on problems in respect to knowledge of plant characteristics and requirements in natural and man-made environments; preparation of planting plans and specifications.
435. DESSEIN (3). Pr., fourth-year standing in LA program and LA 303. Coreq., LA 401. Coordinated Natural Science Elective. ZY 306, LA 363. Explores techniques for large-scale inventory and resource analysis. Includes overlay mapping, air-photo interpretation and computer-generated mapping.
455. SELECTED TOPICS IN LANDSCAPE ARCHITECTURE (3). Pr., 4th year standing. A special experimental seminar or independent study course to cover topics not treated by regular course offerings.
495. SPECIAL PROBLEMS IN LANDSCAPE ARCHITECTURE (3). Pr., 3rd year standing. Development on a tutorial basis of an area of special interest through independent study. Maximum credit of six hours.
501. ADVANCED LANDSCAPE ARCHITECTURAL DESIGN (6). LEC. 2. STUDIO 10. Pr., AR 403. Studio emphasizing research, planning and design problems at regional scale. S/U Option.
502. THESIS/TERMINAL PROJECT (6). S/U Option.
503. THESIS/TERMINAL PROJECT (8). Pr., LA 502, 598. S/U Option.
553. SEMINARS IN INTERDISCIPLINARY ISSUES (3). Pr., admission to fourth-year standing in studio. Seminar or independent study to cover topics not treated by regular course offerings or of interest to individual faculty.
597. INTRODUCTION TO RESEARCH (3). S/U Option.
598. THESIS RESEARCH (2). Winter. S/U Option. Methods and application to the fifth-year thesis project.
599. THESIS RESEARCH (1). Spring. Research methods and their application to the fifth-year thesis project.

Art (AT)

Professors Lyon, Head, Dugas, Furr, Gluhman, Hartsfield, Olson, Price and Ross
Associate Professors Comstock, Fleming, Graham, Heck, La Roux, Lewis, Morgan,
Munday, Nell and Wagoner

Assistant Professors Braden, Kritic and Lovett

Studio courses require eight hours contact with instructor and four hours independent work.

101. DRAWING I (3). STUDIO 9. Not open to VAT majors; credit cannot be applied toward B.F.A. degree. Basic principles of freehand drawing.

102. STUDIO ART I (3). STUDIO 9. Not open to VAT majors; credit cannot be applied toward B.F.A. degree. Introduction to and practice in the application of the plastic elements, color, form, line, texture, space, etc. Emphasis on two-dimensional organization.
103. CERAMICS (3). STUDIO 9. Not open to VAT majors; credit cannot be applied toward B.F.A. degree. Pr., AT 102. Introduction to principles of sculpture and three-dimensional design using clay as a medium. Exercises in construction, modeling, casting and wheel throwing.
104. BEGINNING PAINTING (3). STUDIO 9. Not open to VAT majors; credit cannot be applied toward B.F.A. degree. Water-based painting media and picture structure; exercise in still-life and landscape painting.
105. DRAWING II (3). STUDIO 9. Not open to VAT majors; credit cannot be applied toward B.F.A. degree. Pr., AT 101. Directed exploration and investigation of the elements of drawing through exercise/assignments involving the figure, still-life, objects from nature and interior and exterior environments.
111. FUNDAMENTALS (4). STUDIO 12. Basic drawing with emphasis on pictorial organization and the depiction of space using various media.
112. FUNDAMENTALS (4). STUDIO 12. Basic drawing with emphasis on accurate observation, pictorial organization and understanding of line and tone.
113. FUNDAMENTALS (4). STUDIO 12. Pr., AT 111, 112. Interpretive drawing. Emphasis on concept, content, creativity, pictorial organization and color.
121. FUNDAMENTALS (4). STUDIO 12. Elements and principles of basic design. Emphasis on two-dimensional composition, color theory and craftsmanship.
122. FUNDAMENTALS (4). STUDIO 12. Basic three-dimensional organization. Exploration of various media.
123. FUNDAMENTALS: COLOR (4). STUDIO 12. Pr., AT 121, 122. The study of theoretical, physiological and psychological aspects of color in two and three dimensions using various media with continuing emphasis on skill and concept development.
171. HISTORY OF ART I (3). LEC. 3. A survey of painting, sculpture and architecture from Paleolithic through early Medieval times.
172. HISTORY OF ART II (3). LEC. 3. A survey of painting, sculpture and architecture from Romanesque through Baroque periods.
173. HISTORY OF ART III (3). LEC. 3. A survey of painting, sculpture and architecture from the Rococo period to recent times.
211. BASIC FIGURE DRAWING (4). STUDIO 12. Pr., AT 113, 121, 122, 171, 172, 173. Open to VAT majors only. Drawing in various media emphasizing the human figure as form and as a compositional element. Measuring and sighting for proportion will be introduced. Requires drawing from live nude models.
212. FIGURE CONSTRUCTION (4). STUDIO 12. Pr., AT 113, 121, 122, 171, 172, 173. Open to VAT majors only. Lectures deal with form, function and operation of skeletal and muscular parts of the body. Drawing from casts, skeleton and from the live nude model.
213. FIGURE DRAWING (4). STUDIO 12. Pr., AT 123, 211, 212. Open to VAT majors only. Drawing from the model in various media, with emphasis on interpretation, expression and composition. Requires drawing from live nude models.
- 214-215-216. DRAWING (4-4-4) STUDIO 12. Pr., AT 213 and taken in sequence. Open to VAT majors only. Drawing process as a means of creating finished works. Emphasis on concept development and creativity. Various media. Live nude models may be used on occasion.
221. GRAPHIC PROCESSES (4). STUDIO 12. Pr., AT 111, 112, 123, 171, 172, 173. Open to VAT majors only. Graphic reproduction processes, preparation of art copy for reproduction, copy fitting, paper, related subjects.
222. DESIGN SYSTEMS (4). STUDIO 12. Pr., AT 111, 112, 123, 171, 172, 173. Design procedures for creative problem solving in visual organization; emphasis on presentation and visualization of concepts.
223. GRAPHIC FORMATS (4). STUDIO 12. Pr., AT 113, 221, 222. Applied problems in editorial and advertising layout. Emphasis on relationship of format to media.
- 231-331. OIL PAINTING (4-4). STUDIO 12. Pr., AT 113, 123, 171, 172, 173.
- 232-332. WATER COLOR (4-4). STUDIO 12. Pr., AT 113, 123, 171, 172, 173.
- 233-333. ACRYLIC PAINTING (4-4). STUDIO 12. Pr., AT 113, 123, 171, 172, 173.
- 241-341. RELIEF PRINTMAKING (4-4). STUDIO 12. Pr., AT 113, 123, 171, 172, 173.
- 242-342. INTAGLIO PRINTMAKING (4-4). STUDIO 12. Pr., AT 113, 123, 171, 172, 173.
- 243-343. LITHOGRAPHY (4-4). STUDIO 12. Pr., AT 113, 123, 171, 172, 173.
- 251-351. CLAY SCULPTURE (4-4). STUDIO 12. Pr., AT 113, 123, 171, 172, 173.
252. BASIC SCULPTURE (4). Pr., AT 113, 123, 171, 172, 173. Instruction in sculptural concepts, materials and construction methods.
255. CERAMICS I (4). STUDIO 12. Pr., AT 112, 123. Wheel-thrown and handbuilt pottery. Presentation of historical and contemporary contexts for fine arts ceramics. Work with glazes and firing.
271. HISTORY OF GRAPHIC DESIGN (3). LEC. 3. Pr., AT 171, 172, 173, sophomore standing. History of graphic design from antiquity to the present.
301. ELEMENTARY SCHOOL ART (4). LEC. 2, LAB. 6. Pr., junior standing. Cannot be taken for credit by VAT majors. An introduction to design principles and elements. The theory of teaching art, methods and materials especially related to elementary school art.

321. PHOTODESIGN (4). STUDIO 12. Pr., AT 113, 123, 171, 172, 173. Open to VAT majors only. Technical aspects of equipment, materials and processing. Emphasis on aesthetic analysis. Historical development of photography as related to visual communications. Some special expense required.
322. PHOTOCOMMUNICATION (4). STUDIO 12. Pr., AT 221, 321. Photography as applied communication. Emphasis on advanced technical and studio techniques.
323. TYPOGRAPHICS (4). STUDIO 12. Pr., AT 221. Practical applications of typography in advertising, editorial and other contemporary formats. Historical and anatomical development of type and letter forms.
324. FUNDAMENTALS OF ELECTRONIC GRAPHIC DESIGN (4). STUDIO III. Pr., AT 213, 222, junior standing. Emphasis on layout, graphic design and illustration projects utilizing computer techniques and equipment.
- 352-353-354. SCULPTURE (4-4-4). Pr., AT 213, 252. Advanced instruction in sculptural concepts, materials and techniques with emphasis on the development of a personal vision and individual approach.
355. CERAMICS II (4). STUDIO 12. Pr., AT 255. Continuation of AT 255 with increased emphasis on stylistic and conceptual concerns.
370. ART OF THE UNITED STATES (3). LEC. 3. Pr. sophomore standing. Architecture, painting and sculpture from colonial to recent times.
371. ANCIENT ART (3). LEC. 3. Pr., sophomore standing. The arts of Mesopotamia and Egypt, of Aegean cultures and of Greece and Rome.
372. MEDIEVAL ART (3). LEC. 3. Pr., sophomore standing. Carolingian, Ottonian, Romanesque and Gothic art and architecture.
373. RENAISSANCE ART (3). LEC. 3. Pr., sophomore standing. 15th and 16th century art and architecture with emphasis on Italy.
374. BAROQUE AND ROCOCO ART (3). LEC. 3. Pr., sophomore standing. 17th and 18th century European painting, sculpture and architecture.
375. 19TH CENTURY ART (3). LEC. 3. Pr., sophomore standing. Major art movements from Neo-Classicism to Post-Impressionism and Art Nouveau.
376. 20TH CENTURY ART (3). LEC. 3. Pr., sophomore standing. Major art movements from 1900 to more recent times.
377. PRE-COLUMBIAN ART (3). LEC. 3. Pr., sophomore standing. The arts of Mexican, Yucatan and Andean cultures before 1519.
378. EARLY NETHERLANDISH PAINTING (3). LEC. 3. Pr., sophomore standing. Covers the 14th to 16th centuries, from the Van Eycks and Van der Weyden to Van Leyden.
379. THE ARTS OF JAPAN (3). LEC. 3. Pr., sophomore standing. Key monuments, influences and personalities from Jomon through Edo periods.
380. ISSUES AND CRITICISM IN CONTEMPORARY ART (3). Pr., AT 173, 376 and successful completion of a studio A, 200-level sequence. Readings and discussions about issues and criticism in art since 1970.
399. VISUAL ARTS INTERNSHIP (4). Pr., successful completion of all 200-level course requirements in student's major area. A seven-week period working full-time as a staff member with an approved internship sponsor under the direction of a supervising art director. Credit given as an art elective. Cannot be repeated for credit.
- 424-425-426. VISUAL DESIGN I-II-III (4-4-4). STUDIO 12. Pr., AT 213, 222, 223, completion of 18 hours of art history and junior standing. Open to VAT majors only. Application of communicative procedures and skills necessary to convey messages by means of graphic presentation: problem solving. Development of student's individual style and main potential. Courses in this sequence must not be taken concurrently.
- 434-435-436. ADVANCED PAINTING/DRAWING I-II-III (4-4-4) STUDIO 12. Pr., AT 213, 231, 232, 233, completion of 18 hours of art history, junior standing and taken in sequence. Open to VAT majors only. Advanced painting with medium and subject idea determined by instructor in consultation with the student. Emphases in these courses are the strengthening of the student's aesthetic awareness and technical skills as a maturing painter. Live nude models may be used on occasion. Courses in this sequence must not be taken concurrently.
- 444-445-446. ADVANCED PRINTMAKING I-II-III (4-4-4). STUDIO 12. Pr., AT 213, 241, 242, 243, completion of 18 hours of art history, junior standing. Open to VAT majors only. Advanced printmaking with medium and subject idea determined by student in consultation with the instructor. Emphases are in the strengthening of the student's aesthetic awareness and technical skills as a maturing printmaker. Courses in this sequence must not be taken concurrently.
- 454-455-456. ADVANCED SCULPTURE I-II-III (4-4-4). STUDIO 12. Pr., AT 213, 252, 352, 353, completion of 18 hours of art history, junior standing. Open to VAT majors only. Advanced sculpture with medium and subject idea determined by student with approval of the instructor. Emphases on strengthening the student's aesthetic awareness and technical skills as a maturing sculptor. Courses must not be taken concurrently.
- 457-458-459. ADVANCED CERAMICS (4-4-4) STUDIO 12. Pr., AT 213, 251, 255, 351 or 355, completion of 16 hours of art history and junior standing. Advanced work in ceramic sculpture and/or pottery.
- 464-465-466. ILLUSTRATION I-II-III (4-4-4). STUDIO 12. Pr., AT 213, 223, completion of 18 hours of art history and junior standing. Open to VAT majors only. Application of illustrative concepts, media and techniques to various graphic formats. Development of personal skills and an individual style. Courses must not be taken concurrently.
471. HONORS READINGS (3-5). Pr., admission to the Auburn University Honors Program. Only open to art majors. May be repeated to a maximum of 5 hours.
470. SPECIAL TOPICS IN ART HISTORY (3). Pr., AT 171, 172, 173, nine hours art history at 300-level and junior standing.

Aviation Management

472. HONORS RESEARCH AND THESIS (1-3). Pr., admission to the Auburn University Honors Program. Only open to art majors.
484. ADVANCED PHOTOGRAPHY (4). STUDIO 12. Pr., 3.0 minimum average in AT 321 and departmental approval. Open to students who have shown ability, initiative and industry on individual projects. Independent study.
499. SENIOR PROJECT (5). Pr., completion of Group B Studio in area of concentration and must be taken during the student's final quarter. A directed terminal studio project with choice of subject and medium. The project will be exhibited and a committee will award a letter grade. Professional quality color slides of the project work must be presented to the department before the student is cleared for graduation.

ADVANCED UNDERGRADUATE AND GRADUATE

501. ART IN EDUCATION (4). LEC. 2., LAB. 6. Pr., senior standing. Cannot be taken for credit by VAT majors. Lectures, reading and research concerning principles and objectives of pertinent phases of Art for the purpose of understanding their significance in teaching at all levels. Emphasis is on creativity rather than technical skill in laboratory experimentation.
520. INDEPENDENT STUDY IN ADVANCED DESIGN (4). Pr., 3.0 minimum average in AT 424, 425 and 426, senior standing. Open to students who have shown ability, initiative and industry on individual projects.
530. INDEPENDENT STUDY IN ADVANCED PAINTING (4). Pr., 3.0 minimum average in AT 434, 435 and 436, senior standing. Open to students who have shown ability, initiative and industry on individual projects.
540. INDEPENDENT STUDY IN ADVANCED PRINTMAKING (4). Pr., 3.0 minimum average in AT 444, 445 and 446, senior standing. Open to students who have shown ability, initiative and industry on individual projects.
550. INDEPENDENT STUDY IN ADVANCED SCULPTURE (4). Pr., 3.0 minimum average in AT 454, 455 and 456, senior standing. Open to students who have shown ability, initiative and industry on individual projects.
560. INDEPENDENT STUDY IN ADVANCED ILLUSTRATION (4). Pr., 3.0 minimum average in AT 464, 465 and 466, senior standing. Open to students who have shown ability, initiative and industry on individual projects.
570. INDEPENDENT STUDY IN ART HISTORY (3-3). Pr., 18 hours of art history, senior standing. Open to students who have shown ability, initiative and industry on individual projects. Research, drawings and reports on historical topics under supervision.

COURSES FOR GRADUATE STUDENTS

- 621-622-623-624-625-626-627. GRADUATE DESIGN (5-5-5-5-5-5-5). Studio 15-15-15-15-15-15-15. Open to MFA candidates only. Graduate-level work in the field of applied design. Students enrolled in these courses must have a good general background in the subjects and some experience in practice. Course work will include concepts, experimental studies and applied techniques. Some liaison with industry is involved.
- 631-632-633-634-635-636-637. GRADUATE PAINTING/DRAWING (5-5-5-5-5-5-5). Studio 15-15-15-15-15-15-15. Open to MFA candidates only. Graduate-level painting and/or drawing with student's choice of media and subject ideas. Students are expected to develop a mature personal style of work that exploits their full potential.
- 641-642-643-644-645-646-647. GRADUATE PRINTMAKING (5-5-5-5-5-5-5). Studio 15-15-15-15-15-15-15. Open to MFA candidates only. Graduate-level printmaking with student's choice of media and subject ideas. Students are expected to develop a mature personal style of work that exploits their full potential.
- 651-652-653-654-655-656-657. GRADUATE SCULPTURE (5-5-5-5-5-5-5). Studio 15-15-15-15-15-15-15. Open to MFA candidates only. Graduate-level sculpture with student's choice of media and subject ideas. Students are expected to develop a mature personal style of work that exploits their full potential.
- 661, 662, 663, 664, 665, 666, 667. GRADUATE ILLUSTRATION (5-5-5-5-5-5-5). Studio 15-15-15-15-15-15-15. Open to MFA candidates only. Graduate-level work in the applied field of illustration. Students enrolled in these courses must have a good general background in the subject and some experience in practice. Course work includes concepts, experimental studies and applied techniques. Some liaison with industry is involved.
- 671-672-673. GRADUATE ART HISTORY RESEARCH (5-5-5). Research on approved topics in art history with understanding and interpretation of various movements. Requires regular consultations and written reports.
697. CRITICAL ESSAY (5). Pr., completion of all studio and art history requirements. The student is expected to give an in-depth critical evaluation of the student's own works as they relate to theories developed in research of art history. Conferences with the advisory committee and a formal, written report are required.
698. TERMINAL STUDIO PROJECT (5). Pr., completion of all studio and art history requirements. A major art problem consisting of a sustained single project or a logical sequence of shorter projects. Candidate will be required to conceive and execute a work or works exhibiting pronounced creative ability and technical proficiency. An exhibition of the completed project is required.

Aviation Management (AM)

Professors Cochran, *Head*

Program Coordinator Cash

Associate Professor Ripley

Assistant Professors Dellinger, Johnson and Klemm

Professional Flight Coordinator Cash

Non-AM majors need departmental approval to take AM 400-level courses.

101. INTRODUCTION TO AVIATION (3). LEC. 3. Orientation into aviation management career opportunities and a history of significant events and accomplishments in man's attempt to move through air and space.

200. AEROSPACE PROBLEMS ANALYSIS (3). LEC. 3. Pr., MH 161. Application of basic mathematical and physical concepts to problems in the aerospace industry.
201. ELEMENTARY AERONAUTICS (3). LEC. 3. Pr., AM 200. Basic flight physiology, subsonic and supersonic aerodynamics, aircraft propulsion and structures and aircraft maintenance management.
207. BASIC PROGRAMMING AND APPLICATIONS TO AVIATION MANAGEMENT (3). LEC. 3. Pr., AM 200. Introduction to the use of the computer as a problem solving tool. Program structure and development, decision making, documentation.
214. FLIGHT ORIENTATION (1). LAB 3. Basic flight experience for non-pilots to familiarize aviation majors, engineers, teachers and other students desiring a limited exposure to flight. Includes ground discussion and aircraft flight time. Special Fee.
- 215-216. PRINCIPLES OF PRIVATE FLIGHT I, II (3-3). General introduction and preparation for the FAA private pilot written examination. Topics: theory of flight, aircraft and engine performance, regulations, meteorology, navigation, airspace utilization and aviation physiology.
- 217-218. PRIVATE PILOT FLIGHT TRAINING I-II (1-1). LAB. 3-3 for 217. Pr., AM 215. For 218 Pr., AM 216 and 217 or departmental approval. Dual and solo flight instruction and discussion to prepare for FAA Private Pilot Certificate. Special Fee.
220. STATISTICS (3). LEC. 3. Pr., AM 200, 207. Introduction to principles of statistical analysis and application.
304. ELEMENTARY METEOROLOGY (5). LEC. 5. Pr., sophomore standing. Basic principles, causes, effects and phenomena of weather with fundamental techniques of forecasting. Not open to AM students.
305. AVIATION METEOROLOGY (5). LEC. 5. Pr., PS 206. Basic meteorology as it applies to the operation of aircraft with emphasis on observation of weather elements and the interpretation of flight planning weather information.
306. WEATHER OBSERVATION. (2). Pr., AM 304 or AM 305. Techniques of weather observations and reporting of basic weather information for aviation. Provides assistance for qualification as a supplementary aviation weather station observer.
309. PROPULSION AND SYSTEMS I (4). LEC. 4. Pr., PS 206, AM 207. Coverage of propulsion principles, description of reciprocating engines and major components and principles of operations. Description and operation of systems commonly found on aircraft powered by reciprocating engines.
310. PROPULSION AND SYSTEMS II (4). LEC. 4. Pr., PS 206, AM 207. Coverage of turbine engine components and principles of operation. Description and operation of systems typically found on commercial transport aircraft and selected aerospace vehicles.
314. AEROSPACE MANAGEMENT AND OPERATIONAL PROBLEMS (5). Pr., AM 207. Introduction to the use of operations research techniques. Includes the role of math modeling procedures, manual and computer generated solutions, applied to the decision making process.
320. ECONOMIC ANALYSIS IN THE AVIATION INDUSTRY (5). LEC. 5. Pr., EC 200 or 301, AM 200, 207. Development of principles required in economic analysis.
322. COMMERCIAL FLIGHT TRAINING I (1). LAB. 3. Pr., Private Pilot Cert. and departmental approval. Continuation of flight training toward Instrument Rating and Commercial Pilot Certificate. Emphasis on instrument, cross-country and night flying. Special fees.
323. AIRCRAFT OPERATION AND PERFORMANCE (4). LEC. 4. Pr., Private Pilot Certificate or departmental approval. Principles of aircraft performance and operations, aircraft systems, equipment, aviation weather theory and services, Federal Aviation regulations and preparation for FAA commercial written examination.
324. COMMERCIAL FLIGHT TRAINING II (1). LAB. 3. Pr., AM 322. Coreq., AM 323 and departmental approval. Continuation of flight training toward Instrument Rating and Commercial Pilot Certificate. Emphasis on instrument and cross-country flying. Special fees.
325. PRINCIPLES OF INSTRUMENT FLIGHT (5). LEC. 5. Pr., departmental approval. Instruments, FAA regulations, air traffic control procedures, radio navigation and aircraft operation and performances as applied to instrument flying. Preparation for the FAA Instrument Pilot written examination.
326. COMMERCIAL FLIGHT TRAINING III (1). LAB. 3. Pr., AM 324, 325. Coreq., AM 323 and departmental approval. Completion of Instrument Rating and continuation of flight training toward Commercial Pilot Certificate. Emphasis on instrument flying, advanced commercial maneuvers and high performance flying. Special fees.
327. COMMERCIAL FLIGHT TRAINING IV (1). LAB. 3. Pr., AM 323, 326 and departmental approval. Completion of Commercial Pilot Certificate. Emphasis on advanced commercial maneuvers and high performance flying. Special fees.
401. AERONAUTICAL SEMINAR (1). LAB. 3. Pr., senior standing. Special problems and current status of the aerospace industry.
402. LAND USE CONTROL (2). Pr., AM 409. The methods of control of the use of private property with particular emphasis on property near airports.
403. GENERAL AVIATION MANAGEMENT (3). Pr., MN 310, junior standing. An overview of general aviation and its impact and interaction with the total aviation industry including a study of the various users, the suppliers and service organizations, the aircraft and facilities and regulatory framework.
404. GENERAL AVIATION OPERATIONS (3). LEC. 2, LAB. 3. Current principles and practices in commercial and business/corporate flight operations including organizations, sources of revenue, functions, operation and typical problems.
405. AVIATION SAFETY (3). Pr., AM 201 or departmental approval. Problems and issues of aviation safety including aircraft accidents, their cause, effect and the development of safety programs and procedures.

408. AIR TRANSPORT PLANNING (3). Pr., AM 409. Management decision making involved in selection of equipment, routes and the establishment of rates by certified and non-certified air carriers.
409. AEROSPACE LAW AND INSURANCE (3). Pr., MT 241 or 255. The legal structure of aviation including federal, local and state statutes, contracts, insurance and liability, regulatory statutes and case law.
413. AIRPORT MANAGEMENT (3). Pr., MN 310, junior standing. Practices in management of a civil public airport, including organization, functions, operations, sources of revenue, funding, maintenance and administration.
414. AIRPORT PLANNING (3). Pr., AM 413, principles and procedures pertaining to planning airport facilities required to meet the immediate and future air transportation of a community or region.
416. AIR TRANSPORTATION AND AIRLINE OPERATIONS I (3). Pr., AM 310 and junior standing or departmental approval. Significance of air transportation in modern society. Development of the present system. Economic and social costs and benefits of the present air transport system.
417. AIR TRANSPORTATION AND AIRLINE OPERATIONS II (3). Pr., AM 416 and junior standing or departmental approval. Airline organization, management and operations. Functions of the planning, pricing and scheduling processes in various organizational components. Introduction to airline simulations.
- 417L. AIRLINE OPERATIONS LAB (2). Pr., AM 417 and departmental approval. Simulation of airline operations. Students compete as teams in a simulated commuter airline industry environment. Prepare marketing strategy and campaign; plan fleet and schedule; acquire aircraft; and simulate operating a small airline.
418. INTERNATIONAL AIRLINES OPERATIONS (3). Pr., AM 409, junior standing. International foreign air carriers, influences of ICAO and IATA, national ownership, determinants of power, operational and management practices, routes and fares.
419. AIR TRAFFIC CONTROL (4). LEC. 4. Basic air traffic control procedures, facilities, centers and operations.
- 419L. AIR TRAFFIC CONTROL LAB (1). LAB. 3. Coreq., AM 419. Theory and fundamentals of radar operation and air traffic separation using computer-based ATC radar simulators. Topics parallel those in AM 419. Special fees.
420. AIR CARGO OPERATIONS (3). Pr., junior standing. Domestic and international air cargo operations with emphasis on cargo economics, equipment, domestic and international regulatory activities, agents, operational techniques, systems and problems.
421. COMMUTER AIRLINE OPERATIONS AND MANAGEMENT (3). Pr., AM 409, coreq., AM 417 or departmental approval. Management practices and operational characteristics of the commuter airline and its place in the air transportation system.
427. MULTI-ENGINE TRAINING I (2). LEC. 1, LAB. 3. Pr., AM 327 or Commercial Pilot Certificate with instrument rating and departmental approval. Instruction in methods and techniques of multi-engine aircraft pilotage. Sufficient ground and flight instruction is given to qualify for the FAA pilot rating of Multi-Engine-Land. Special Fee.
428. PRINCIPLES OF FLIGHT INSTRUCTION (3). Pr., AM 327. Principles of teaching as applied to instructing, analyzing and evaluating flight students. Emphasis is on preparation for the FAA Flight Instructors Written Examination.
429. FLIGHT INSTRUCTOR TRAINING (1). LAB. 3. Pr., 327 Commercial Pilot Certificate with instrument rating. Coreq., AM 428 and departmental approval. Discussion, instruction and arranged practice in flight instruction in preparation for the FAA Flight Instructor Certificate. Special fee.
431. MULTI-ENGINE TRAINING II (2). LEC. 2. Pr., AM 327, coreq., AM 427 and departmental approval. Principles of personnel transportation in night and IFR operations; includes aircraft operations, flight planning, weather decision and passenger relations.
432. PRINCIPLES OF PROFESSIONAL FLIGHT (3). LEC. 3. Pr., AM 325 and departmental approval. Advanced aircraft performance IFR operations, high altitude meteorology and FAR part 135. Industry opportunities and required qualifications.
433. TRANSPORT AIRCRAFT FLIGHT TRAINING (1). LAB. 3. Pr., AM 327, 427, 431 and departmental approval. Includes instrument and night instruction, emergency procedures and actual air transportation operations. Preparation for Airline Transport Pilot Certification if otherwise qualified. Special fee.
435. INSTRUMENT FLIGHT INSTRUCTOR TRAINING (2). LEC. 1, LAB. 3. Pr., AM 327, 429 and departmental approval. Discussion, instruction and arranged practice in instrument flight instruction in preparation for the FAA instrument Instructor Certificate. Special fee.
437. MULTI-ENGINE FLIGHT INSTRUCTOR TRAINING (2). LEC 1, LAB. 3. Pr., AM 327, 427, 429 and departmental approval. Principles and techniques of multi-engine flight instruction in preparation for FAA Multi-Engine Flight Instructor Rating. Special fee.
491. SPECIAL PROBLEMS (VARIABLE CREDIT). Pr., department approval. Individual student endeavor under faculty supervision involving special problems of an advanced nature in aviation management. May be taken more than once with a maximum credit of six hours.
492. INTERNSHIP IN AVIATION MANAGEMENT. VARIABLE CREDIT (1-6). Pr., departmental approval. Provides student with practical on-the-job training under supervision with aviation agencies. Written reports are required by designated faculty supervisor.

ADVANCED UNDERGRADUATE AND GRADUATE

551. AEROSPACE SCIENCE (5). A non-technical presentation of the principles and fundamentals of aviation and aerospace science, related systems and related equipment. For students who require a general knowledge of aviation or aerospace science. Includes lectures by aerospace authorities and visits to aeronautical and aviation facilities. Not open to engineering students.

Biology (BI)

For other staff and related courses, see sections for Botany and Microbiology and Zoology and Wildlife Science.

101. PRINCIPLES OF BIOLOGY (5). LEC. 4, LAB. 3. Integrated principles of biology with emphasis on organic macro-molecules, bioenergetics, cell structure and function, heredity, evolution and ecology. For the science-oriented curriculum. Credit is not allowed for both BI 101 and 105 or BI 101 and SM 101.
102. PLANT BIOLOGY (5). LEC. 4, LAB. 3. Pr., BI 101. The morphology, physiology, relationships, distribution and importance of plants. For the science-oriented curriculum.
103. ANIMAL BIOLOGY (5). LEC. 4, LAB. 3 Pr., BI 101. Morphology, physiology, relationships, distribution and importance of animals. For the science-oriented curriculum. Credit will not be allowed for both BI 103 and 106.
105. PERSPECTIVES IN BIOLOGY (5). LEC. 4, LAB. 2. Principles of biology with emphasis on the relationship between humankind and modern biological science. Topics include cell biology, inheritance, evolution and introduction to ecology. For the student satisfying a general education requirement in natural science. Cannot be used to meet major or minor requirements in biological science. Credit will not be allowed for both BI 101 and 105 or SM 101 and BI 105.
106. HUMAN BIOLOGY (5). LEC. 4, LAB. 1. Pr., BI 101 or 105 or SM 101. Introductory human anatomy and physiology with emphasis on recent improvements in health care. For the student satisfying a general education requirement in natural science. Cannot be used to meet major or minor requirements in biological science. Credit is not allowed for both BI 106 and BI 103.
107. ENVIRONMENTAL BIOLOGY. (5). LEC. 4, REC. 1. Pr., BI 101 or 105 or SM 101. An introductory ecological approach to understanding human impact and dependence on the natural environment. Broad topics include ecosystems, nutrient cycles, pollution, pest management, conservation of natural resources, energy and human population. For the student satisfying a general education requirement in natural science. Cannot be used to meet major or minor requirements in biological science.
171. HONORS PRINCIPLES OF BIOLOGY (5). LEC. 4, LAB. 3. Integrated principles of biology with emphasis on organic macromolecules, bioenergetics, cell structure and function, heredity, evolution and ecology. Credit is not allowed for both BI 171 and 101 or BI 171 and 105.
173. HONORS ANIMAL BIOLOGY (5). LEC. 4, LAB. 2. Pr., BI 171. Morphology, physiology, relationships, distribution and importance of animals. Credit is not allowed for both BI 173 and 103 or BI 173 and 106

Biomedical Sciences (BMS)

COURSES FOR GRADUATE STUDENTS

600. INTRODUCTION TO GRANTSMANSHIP (2). Pr., departmental approval. Fall, odd years. Introduction to the process of grant proposal writing in the biomedical sciences. Includes mechanisms of grant writing, strategies for success in acquiring funding, research laboratory management and scientific ethics.
696. BIOMEDICAL SCIENCES SEMINAR (1-2) Critical review of current scientific literature.
798. RESEARCH PROBLEMS (Credit to be arranged. May be taken more than one quarter.)
799. RESEARCH AND DISSERTATION (Credit to be arranged. May be taken more than one quarter.)

Botany and Microbiology (BMI)

Professors Cherry, Dute, Lemke, Singh and Weete

Associate Professors Brown, Chair, Barbaree, Boyd, Daniell, Locy, Musso, Nielsen and Shaw

Adjunct Associate Professors Stout and Tuzun

Assistant Professors Campbell, Folkerts and Hinton

Affiliate Assistant Professor Kirkman

Adjunct Instructor Corsby

With few exceptions BI 101 and BI 102 are prerequisite to all courses in this department. For a description of these and other general biology courses, see the section on Biology (above). For additional offerings in microbiology consult the curriculum in Veterinary Medicine (VM), especially with reference to advanced courses in Pathobiology (VPB). A curriculum in Molecular Biology (MOB) is also administered through the Department of Botany and Microbiology.

BOTANY (BY)

306. FUNDAMENTALS OF PLANT PHYSIOLOGY (5). LEC. 3, LAB. 4. Pr., BI 102, CH 203 or 207 or equivalent. Fall, Winter. General aspects of fundamental life processes of plants involving physiological, structural and environmental relationships.
405. INTRODUCTORY MOLECULAR GENETICS (4). LEC. 4. Pr., BI 101, CH 208 and ZY 300 or departmental approval. Fall. Fundamentals of molecular genetics at the level of DNA sequence. Lectures on mechanisms employed by living organism to ensure correct expression of genes given. Topics include transcription, translation, regulation, promoters and other regulatory sequences, replication, repair, eukaryote genomes, introns and exons. A suitable prerequisite for upper level studies in molecular genetics such as ZY 519 and MB 522.

460. SPECIAL PROBLEMS (1-3). Pr., departmental approval, senior standing. A. Anatomy; B. Ecology; C. Molecular Biology; D. Morphology; E. Physiology; F. Taxonomy; G. Environmental Issues. A student cannot register for more than three hours credit in any one quarter or in any one area and more than six hours credit total for the degree.
470. HONORS THESIS (3-6). Pr., senior standing in the honors program. May be repeated once for maximum of six hours credit.

ADVANCED UNDERGRADUATE AND GRADUATE

505. INTRODUCTORY MYCOLOGY (5). LEC. 3, LAB. 4. Pr., BI 101-102 or equivalent. Fall. A systematic survey of the fungi with emphasis on morphology. (Same course as PLP 505.)
506. SYSTEMATIC BOTANY (5). LEC. 3, LAB. 4. Pr., BI 101-102 or equivalent. Fall, odd years, and Spring. Identification, classification, nomenclature, distribution and systematic relationship of the seed-bearing plants, utilizing primarily elements of the local flora as study material. The historical background, literature of plant taxonomy and rules of nomenclature will be considered. Field trips include an overnight weekend field trip.
507. SALT MARSH ECOLOGY (6). LEC. 4, LAB. 12. Pr., BI 101-102 or equivalent. Summer. The botanical aspects of local marshes: includes plant identification, composition, structure, distribution and development of coastal marshes. Offered only at the Gulf Coast Research Laboratory, Ocean Springs, MS.
509. MARINE BOTANY (6). LEC. 5, LAB. 12. Pr., BI 101-102 or equivalent or departmental approval. Summer. Survey, based upon local examples, of the principal groups of marine algae and maritime flowering plants, involving their structure, reproduction, distribution, identification and ecology. Offered only at the Gulf Coast Research Laboratory Teaching Session at Ocean Springs, MS.
510. COASTAL VEGETATION (4). LEC. 3, LAB. 10. Pr., BI 101-102 or equivalent. Summer. General and specific aspects of coastal vegetation, with emphasis on local examples. Offered only at the Gulf Coast Research Laboratory, Ocean Springs, MS.
513. GENERAL PLANT ECOLOGY (5). LEC. 3, LAB. 4. Pr., BI 102, ZY 306 or departmental approval. Spring. Natural vegetation, environment and interrelationships between the two with emphasis on the Southeastern United States. Field trips will be made, including a weekend trip.
514. BIOLOGICAL MICROSCOPY (5). Lec. 2, LAB. 6. Pr., BI 102-103 or equivalent. Fall. Methods of tissue preparation for observation with the light microscope, including fixing, paraffin and plastic embedding, sectioning, general and cytochemical staining and mounting. Squash techniques. Optical microscopy, micrometry and photomicrography. Techniques for developing, printing, enlarging and copying for photographic illustration. Preparation of 2 x 2 transparencies.
515. PLANT DEVELOPMENT (5). LEC. 3, LAB. 4. Pr., BY 306 or departmental approval. Spring. The structure and development of plant cells, tissues and organs with emphasis on a review of the current anatomical, experimental and ultrastructural literature.
517. MARINE BOTANY (6). LEC. 8, LAB. 24, 4 days/5 weeks. Pr., BI 101-102 or equivalent. General survey of marine algae, vascular and non-vascular plants associated with the marine and estuarine environment. Structure, reproduction, identification, distribution and ecology are considered. Offered only at Dauphin Island Sea Laboratory.
518. MARSH ECOLOGY (6). LEC. 8, LAB. 24, 4 days/5 weeks. Pr., advanced standing in biology. Floral and faunal elements of various marine marsh communities. Interaction of physical and biological factors will be emphasized. Structured to provide actual field experience. Trips scheduled to acquaint students with examples of marsh types. Offered only at Dauphin Island Sea Laboratory.
550. PLANT MOLECULAR BIOLOGY (4). LEC. 4. Pr., MB 522. Spring. Introduction to plant molecular biology and gene expression in plants including organization and expression of nuclear, chloroplast and mitochondrial genome, transposable elements, plant infectious agents, direct and agrobacterium mediated gene transfer and application of biotechnology in crop improvement.

COURSES FOR GRADUATE STUDENTS

604. ADVANCED TOPICS IN PLANT BIOLOGY AND MICROBIOLOGY (2). LEC. 4. Pr., departmental approval. The following five-week courses provide students with detailed information in relevant areas of current research in plant biology and microbiology. (A) Water Relations & Osmotic Stress; Fall, odd years. (B) Environmental Stresses; Fall, odd years. (C) Respiration and Energy Metabolism; Winter, even years. (D) Nitrogen Metabolism; Winter, even years. (E) Plant Hormones; Spring, even years. (F) Molecular Biology of Plant Organelles; Fall, even years. (G) Molecular Biology of Plant Development; Fall, even years. (H) Microbe - Plant Interactions; Fall, even years. (I) Photosynthesis; Spring, odd years. (J) Carbohydrate Metabolism; Spring, odd years.
607. ULTRASTRUCTURE OF PLANT CELLS AND MICROBES (5). LEC. 3, LAB. 4. Pr., departmental approval. Winter. Subcellular construction of plant cells, fungi and bacteria. Laboratory experience in the use of transmission and scanning electron microscopes will supplement lecture material.
608. ADVANCED SYSTEMATIC BOTANY (5). LEC. 2, LAB. 6. Pr., BY 506. Fall, even years. Experimental and research aspects of the taxonomy of vascular plants. The literature, techniques and methodology relative to the identification and biosystematic classification of evolutionary units; intensive study of special groups of plants and the application of resultant data to specific taxonomic problems.
612. CYTOLOGY AND CYTOGENETICS (5). LEC. 3, LAB. 4. Pr., ZY 300. Fall, odd years. Cell structure and function with emphasis on cell reproduction and factors contributing to the evolution of organisms. Same as AY 612.
615. ADVANCED PLANT DEVELOPMENT (5). LEC. 3, LAB. 4. Pr., BY 306 or departmental approval. Spring. The structure and development of plant cells, tissues and organs with emphasis on a review of the current anatomical, experimental and ultrastructural literature.

619. PLANT/ANIMAL INTERACTIONS (5). LEC. 5. Pr., ZY 306 or equivalent or departmental approval. Odd years. Overview of ecological and evolutionary interrelationships between animals and higher plants, including pollination biology, dispersal ecology and plant-herbivore interactions.
625. SPECIAL PROBLEMS (CREDIT TO BE ARRANGED.) (A). Anatomy; (B). Chemical Weed Control; (C). Cytology; (D). Ecology; (E). General Biology Teaching; (F). Marine Biology; (G). Molecular Biology; (H). Morphology; (I). Physiology; (J). Taxonomy; (K). Ultrastructure.
626. ADVANCED MYCOLOGY I (5). LEC. 2, LAB. 6. Pr., BY 505 and departmental approval. Spring, even years. Classification of fungi and lichens. Detailed studies of selected families of Ascomycetes and Fungi Imperfecti. Interpretation of comparative morphological criteria and ontogenic patterns as a guide to phylogeny. Intensive floristic investigations of particular habits. Same as PLP 626.
627. ADVANCED MYCOLOGY II (5). LEC. 2, LAB. 6. Pr., BY 505 and departmental approval. Spring, odd years. Classification of fungi. Detailed study of the Myxomycetes, Phycomycetes and Basidiomycetes. Emphasis will be placed on ecological aspects of fungi in fresh water and in forest habitats. Fungal genetics will be studied. Same as PLP 627.
640. DEPARTMENTAL FORUM (1). Open to all majors and minors. May be taken more than one quarter. Fall, Winter and Spring. Discussion of current topics in the various sciences and related fields.
642. LIPID BIOCHEMISTRY (5). Pr., ADS 619 or equivalent. Fall, even years. Comparative lipid biochemistry of plants, animals and microbes and the biological functions of lipids.
650. PLANT MOLECULAR BIOLOGY (5) Pr., MB 522. Spring. Introduction to plant molecular biology and gene expression in plants, including organization and expression of nuclear, chloroplast and mitochondrial genome, transposable elements, plant infectious agents, direct and *Agrobacterium* mediated gene transfer; and application of biotechnology in crop improvements. Survey of current literature.
670. TROPICAL BIOLOGY: AN ECOLOGICAL APPROACH (12). LEC. 6, LAB. 12. Pr., 20 hours of biology courses at or above the 500-level. Winter, Summer. An in-depth (eight-week) introduction to the principles of ecology as they operate in the tropics. Orientation and introductory lectures in San Jose, Costa Rica, followed by field work of 2-10 days at each of six or more contrasting tropical sites. Enrollment contingent upon acceptance into course by the Organization for Tropical Studies.
673. TROPICAL PLANT SYSTEMATICS (12). LEC. 6, LAB. 12. Pr., 20 hours of biological courses at or above the 500-level. Summer. Intensive, eight-week field introduction to the identification, inventory, classification and phylogenetic analysis of tropical vascular plants and cryptogams. Based primarily at the Las Cruces Biological Station in Costa Rica. Enrollment is contingent upon acceptance into course by the Organization for Tropical Studies.
699. RESEARCH AND THESIS (CREDIT TO BE ARRANGED.)
704. DOCTORAL TOPICS IN PLANT BIOLOGY/MOLECULAR BIOLOGY. (2). LEC. 4, Pr., departmental approval. The following five-week courses provide doctoral students with detailed information in relevant areas of current research in plant biology and microbiology. (A) Water Relations & Osmotic Stress; Fall, odd years. (B) Environmental Stresses; Fall, odd years. (C) Respiration and Energy Metabolism; Winter, even years; (D) Nitrogen Metabolism; Winter, even years. (E) Plant Hormones; Spring, even years. (F) Molecular Biology of Plant Organelles; Spring, even years. (G) Molecular Biology of Plant Development; Fall, even years. (H) Microbe-Plant Interactions; Fall, even years. (I) Photosynthesis; Spring, odd years. (J) Carbohydrate Metabolism; Spring, odd years.
725. SPECIAL PROBLEMS (CREDIT TO BE ARRANGED.) (A). Anatomy; (B). Chemical Weed Control; (C). Cytology; (D). Ecology; (E). General Biology Teaching; (F). Marine Biology; (G). Molecular Biology; (H). Morphology; (I). Physiology; (J). Taxonomy; (K). Ultrastructure.
740. DOCTORAL SEMINAR (1). May be taken more than one quarter. Fall, Winter, Spring. Oral presentation and discussion of research in the field of specialization.
750. PLANT MOLECULAR BIOLOGY (5). Pr., MB 522. Fall. Introduction to plant molecular biology and gene expression in plants, including organization and expression of nuclear, chloroplast and mitochondrial genome, transposable elements, plant infectious agents, direct and *Agrobacterium* mediated gene transfer; and application of biotechnology in crop improvements. Survey of current literature.
799. RESEARCH AND DISSERTATION (CREDIT TO BE ARRANGED.)

MICROBIOLOGY (MB)

201. PERSPECTIVES IN MICROBIOLOGY (5). LEC. 4, LAB. 3. Pr., BI 101 or 105. Spring. Survey of microbiology affecting human affairs. Basic biology of bacteria, fungi and viruses. Attention given to recognition and control of infectious agents, epidemiology, food handling procedures, sanitation and other aspects important to human health. This course will not satisfy a curriculum requirement for MB 300. Cannot be used to meet major or minor requirements in biological science.
300. GENERAL MICROBIOLOGY (5). LEC. 3, LAB. 4. Pr., BI 101, CH 103. Fundamentals of microbiology including history of microbiology, cell structure, chemical composition, growth, nutrition, metabolism, genetics, classification, cultivation and distribution of bacteria, viruses, rickettsia and fungi; discussion of the effects of chemical and physical agents on the growth of microorganisms.
405. INTRODUCTORY MOLECULAR GENETICS (4). LEC. 4. Pr., BI 101, CH 208 and ZY 300 or departmental approval. Fall. Fundamentals of molecular genetics at the level of DNA sequence. Lectures given on mechanisms employed by living organism to ensure correct expression of genes. Topics include transcription, translation, regulation, promoters and other regulatory sequences, replication, repair, eukaryote genomes, introns and exons. Class is a suitable prerequisite for upper level studies in molecular genetics such as ZY 519 and MB 522.

446. CLINICAL AND PATHOGENIC MICROBIOLOGY (5). LEC. 2, LAB. 6. Pr., MB 300, junior standing. Fall. Isolation, cultivation, identification, classification and pathogenesis of infectious agents, including clinical materials: Mycoplasmata (PPLO), Rickettsiae and Spirochaetes.
460. SPECIAL PROBLEMS (1-10). Pr., departmental approval, sophomore standing. A. Applied Microbiology; B. Diagnostic Microbiology; C. Immunology; D. Microbial Ecology; E. Microbial Physiology; F. Microbial Taxonomy; G. Molecular Biology; H. Virology. A student can complete a maximum of 10 credit hours in one area with no more than five credit hours allowable per quarter.
470. HONORS THESIS (3-6). Pr., senior standing in the honors program. May be repeated once for maximum of six hours credit.
495. UNDERGRADUATE SEMINAR (1). Pr., junior standing. Oral presentation and discussion of research in the area of specialization. May be repeated for credit up to the limit permitted in respective curriculum model.

ADVANCED UNDERGRADUATE AND GRADUATE

508. MARINE MICROBIOLOGY (7). LEC. 5, LAB. 12. Pr., MB 300 and departmental approval. Summer. The role of microorganisms in the oceans and estuaries. Emphasis on bacteria and fungi. Lecture and laboratory work includes sampling procedures, taxonomy of marine bacteria, mineralization, microbial fouling, pollution and diseases of marine animals. Offered only at the Gulf Coast Research Laboratory, Ocean Springs, MS.
522. GENE EXPRESSION AND RECOMBINANT DNA (3). LEC. 3. Pr., MB 300, ZY 300 and either MB 405 or CH 521. Winter. Structure and function of genes; concepts and techniques in recombinant DNA.
- 522L. GENE EXPRESSION AND RECOMBINANT DNA LAB (2). LAB. 4. Pr., MB 522 or currently enrolled. Winter. Laboratory experiences demonstrating concepts and techniques in recombinant DNA.
540. MICROBIAL PHYSIOLOGY AND GENETICS (3). LEC. 3. Pr., MB 300, CH 203 or 207. Fall. Cellular structure, function, nutritional requirements, energy metabolism, growth cycles, active transport mechanisms, biosynthesis and mutation and genetics.
541. APPLIED AND ENVIRONMENTAL MICROBIOLOGY (5). LEC. 3, LAB. 4. Pr., MB 300. Winter. Introduces taxonomy, diversity, ecology, the role of microorganisms in industry, biotechnology and agriculture, emphasizing aspects such as genetic engineering of plants and animals, biocontrol of pests and sewage treatment.
542. GENERAL VIROLOGY (3). LEC. 3. Pr., MB 300 and ZY 300 or equivalent. Fall. The molecular biology of bacterial, plant and animal viruses; pathogenesis, diagnosis and cultivation.
543. IMMUNOLOGY (4). LEC. 4. Pr., MB 300 and ZY 300, junior standing. Winter. Immunobiology and immunochemistry of humoral and cellular mechanisms of immunity.
- 543L. IMMUNOLOGY LABORATORY (2). LAB. 4. Pr., MB 543 or currently enrolled. Winter. Exercises in immunology.
556. FOOD MICROBIOLOGY (5). LEC. 3, LAB. 4. Pr., MB 300. Spring. Relationship of habitat to the occurrence of microorganisms on food, environment affecting the growth of various microorganisms in food; microbiological action in food spoilage and food manufacture; physical, chemical and biological destruction of microorganisms in foods; microbiological examination of foodstuffs; and public health and sanitation microbiology.
558. PHOTOSYNTHESIS (3). LEC. 4. Pr., BY 306 or MB 540 or CH 518 or equivalent. Molecular biology and biochemistry of photosynthesis with emphasis on the composition, synthesis, development and operation of the apparatus for oxygenic photosynthesis in higher plants and cyanobacteria and for anoxygenic photosynthesis in other bacteria; photorespiration; genetic engineering of herbicide resistance; genes involved in photosynthesis; coordination and regulation of the chloroplast and nuclear gene expression.

COURSES FOR GRADUATE STUDENTS

604. ADVANCED TOPICS IN PLANT BIOLOGY AND MICROBIOLOGY (2). LEC. 4. Pr., departmental approval. The following five-week courses provide doctoral students with detailed information in relevant areas of current research in plant biology and microbiology. (C) Respiration and energy metabolism; Winter, even years. (D) Nitrogen metabolism; Winter, even years. (F) Molecular biology of plant organesses; Spring, even years. (H) Microbe-Plant Interactions; Fall, even years.
609. BIOMEMBRANES (4). LEC. 4. Pr., CH 518 and 519. Winter, odd years. Structure and function of biological membranes. Experimental and theoretical aspects of membrane structure, isolation and characterization of membrane components will be presented. Microbial and plant membrane systems will be emphasized.
610. ADVANCED MICROBIAL PHYSIOLOGY (5). LEC. 2, LAB. 6. Pr., MB 540, CH 518. Spring, even years. The physiology of microorganisms including energy transfer mechanisms, metabolism, sexuality, mutation and microbial genetics.
622. PRINCIPLES OF RECOMBINANT DNA TECHNOLOGY (4). Pr., MB 300, 405 and/or CH 521 or 646, ZY 300. Winter. Concepts, techniques and applications of recombinant DNA technology. Molecular biology of gene expression and gene rearrangement. Credit is not allowed for both MB 522 and 622.
625. SPECIAL PROBLEMS (CREDIT TO BE ARRANGED.) (A). Clinical Microbiology; (B). Experimental Microbiology; (C). Industrial Microbiology; (D). Medical Virology; (E). Microbial Ecology; (F). Microbial Physiology; (G). Microbial Taxonomy; (H). Molecular Genetics; (I). Serology; (J). Virology.
640. DEPARTMENTAL FORUM (1). May be taken more than one quarter. Fall, Winter and Spring. Discussion concerning current topics in the various sciences and related fields.
660. PROKARYOTIC GENE REGULATION (3). Pr., MB 522 or 622, CH 518 or departmental approval. Spring, even years. Biological functions and molecular mechanisms for control of gene expression in bacteria and their plasmids and phages.
699. RESEARCH AND THESIS (CREDIT TO BE ARRANGED.)

704. DOCTORAL TOPICS IN PLANT BIOLOGY/MOLECULAR BIOLOGY. (2). LEC. 4. Pr., departmental approval. Five-week courses provide information in areas of research in plant biology and microbiology. (C) Respiration and Energy Metabolism; Winter, even years. (D) Nitrogen Metabolism; Winter, even years. (F) Molecular Biology of Plant Organelles; Spring, even years. (H) Microbe-Plant Interactions; Fall, even years.
725. SPECIAL PROBLEMS (CREDIT TO BE ARRANGED.) (A). Clinical Microbiology; (B). Experimental Microbiology; (C). Industrial Microbiology; (D). Medical Virology; (E). Microbial Ecology; (F). Microbial Physiology; (G). Microbial Taxonomy; (H). Molecular Genetics; (I) Serology; (J). Virology.
740. DOCTORAL SEMINAR (1). Required for doctoral students. May be taken more than one quarter. Fall, Winter, Spring. Oral presentation and discussion of research in the field of specialization.
799. RESEARCH AND DISSERTATION (CREDIT TO BE ARRANGED.)

Building Science (BSC)

Professors Mouton, *Head*, Aderholdt, Lechner and Williams

Associate Professors Cooper, Hein, Killingsworth, Love, Wallace and Weiss

Assistant Professors Corley, Kramer and Burleson

Instructor Malloy

101. INTRODUCTION TO BUILDING CONSTRUCTION (3). Overview of the construction industry and its markets, impact, practices, methods and ethics.
160. HISTORY OF BUILDING (3). Development and use of construction methods and materials in western civilization from Greece and Rome to the present time in the United States.
200. DRAWING AND PROJECTIONS (3). LEC. 2. LAB. 3. Pr., sophomore standing. Basic architectural drafting techniques.
202. MATERIALS OF CONSTRUCTION (5). Pr., sophomore standing. Survey of common building materials.
203. WORKING DRAWINGS AND SPECIFICATIONS (4). LEC. 2, LAB. 6. Pr., BSC 200 or ISE 102 or AR 101 and BSC 202. Graphic construction communications; understanding and/or producing working drawings, shop drawings and specifications.
204. CONSTRUCTION SYSTEMS (3). Pr., sophomore standing. Construction systems for buildings.
211. MECHANICS OF STRUCTURES (5). Pr., MH 161, PS 205. Principles of mechanics as applied to building construction; resolution of external forces; analysis of trusses; shear and bending moments.
311. STRENGTH OF MATERIALS (5). Pr., BSC 211 and junior standing in AR or BSC. Strength of materials of structural members. Lectures, problems.
314. REINFORCED CONCRETE (5). Pr., BSC 311. Reinforced concrete. Lectures, research and problems.
315. APPLIED STRUCTURES (5). Pr., BSC 311. Applied design of wood and steel structures.
324. CONSTRUCTION SURVEYING (3). LEC. 2. LAB. 3. Pr., junior standing in BSC, AR or LA. Surveying techniques, topography and dimensional controls for buildings.
330. ENVIRONMENTAL CONTROL I (3). Pr., AR 203. Effects of climate, materials and systems as a component of the design and construction process. Projects, exams, papers.
331. ENVIRONMENTAL CONTROL II (5). Pr., BSC 330. Principles of lighting, electrical and plumbing systems as a component of the design and construction process. Projects, exams, papers.
351. ENERGY AND BUILDINGS (3). Pr., junior standing in BSC or AR. Survey of the effects of climate, design, materials and systems on the energy consumption of buildings. Energy sources (solar, etc.) are investigated.
352. HEATING, VENTILATING AND AIR CONDITIONING SYSTEMS (3). Pr., PS 206 and 03 AR or 03 BSC. Analysis of heating, ventilating and air conditioning systems in buildings.
354. PLUMBING AND ELECTRICAL SYSTEMS (3). Pr., PS 206 and 03 AR or 03 BSC. Analysis of plumbing and electrical systems in buildings.
371. COMPUTERS IN CONSTRUCTION (5). LEC. 2, LAB. 2. Pr., junior standing in BSC (no PBSC). Use of current software in the constructor's office for estimating, scheduling, financial management and construction records.
381. CONSTRUCTION ESTIMATING I (5). LEC. 4, LAB. 3. Pr., BSC 371. Detailed estimating of building component quantities.
382. CONSTRUCTION ESTIMATING II (5). LEC. 4, LAB. 3. Pr., BSC 381. Estimating direct and indirect construction costs and bid preparation.
398. CONSTRUCTION INTERNSHIP (1-5). Pr., junior standing. Practical job experience under joint supervision of an employer and the department. (1-5 SU; may be taken for up to total of 8 hours).
399. EXPERIENTIAL LEARNING (2-5). Pr., sophomore standing and departmental approval. May be repeated once for credit. Students may obtain academic credit for participation in learning experiences of a practical nature outside the normal curricular offerings of the University. S/U graded.
404. CONSTRUCTION CONTRACTING BUSINESS (5). Pr., BSC 382, senior standing. Coreq., BSC 581. Organizing, managing and operating the construction contracting firm.
423. SOILS AND FOUNDATIONS (3). Pr., BSC 311. Soil conditions and its effects on building foundations.
425. TEMPORARY STRUCTURES (3). Pr., BSC 311. Design of formwork and temporary structures in construction.
440. CONSTRUCTION SAFETY AND HEAVY EQUIPMENT (3). Pr., junior standing in BSC or AR. Construction operations safety and heavy equipment used in construction.

Chemical Engineering

460. SPECIAL PROBLEMS (1-5). Pr., department head approval, junior standing. Development of an area of concentration through independent study under staff supervision.
482. HBBA RESIDENTIAL CONSTRUCTION (3). Residential construction considerations through projects, field trips and lectures.
490. BUILDING CONSTRUCTION THESIS (WR) (8). LEC. 2, LAB. 15. Pr., BSC 404 and 581, final quarter prior to graduation. Cost Analysis and Construction Program for a building or special study (each as approved by the Faculty Committee). Construction program to include all documents required by the Contract and/or necessary to construct the project. Candidate will defend project orally before staff and guest specialists.
534. CONSTRUCTION SCHEDULING (5). Pr., BSC 382 and senior standing. Management techniques for planning, scheduling, controlling costs and leveling manpower by use of CPM.
580. CONSTRUCTION LAW (4). LEC. 3, LAB. 3. Pr., senior standing in BSC. The role of law in the construction environment; construction documents and their interpretation; dispute resolution.
581. PROJECT MANAGEMENT IN CONSTRUCTION (WR) (4). LEC. 2, LAB. 2. Pr., BSC 534, senior standing. Coreq., BSC 404. Procedures required to manage a construction project from initiation through completion.
607. CONSTRUCTION ECONOMICS (3). Pr., EC 301, graduate standing and departmental approval. Application of economic theory and techniques to the construction firm, construction process and construction industry.
611. CONSTRUCTION SYSTEMS (3). Pr., graduate standing and departmental approval. Conceptual analysis of various special structural and building systems and the associated construction techniques.
634. CONSTRUCTION PLANNING AND SCHEDULING (3). Pr., graduate standing and departmental approval. Construction planning and scheduling techniques, the analysis of scheduling data and the examination of the decision-making process of construction planning.
650. VALUE ANALYSIS IN CONSTRUCTION (3). Pr., graduate standing and departmental approval. Introduces the concept of value analysis and demonstrates in application and techniques. Seminar setting includes oral and written reports by students. Each student will be responsible for independent study.
652. ENERGY IN BUILDING CONSTRUCTION (3). Pr., graduate standing and departmental approval. Energy use both during the construction process and after the building is occupied.
660. SEMINAR (1-3). Pr., departmental approval. Presentation and discussion of current BSC research and extension activities by students, faculty and guest professionals.
670. DIRECTED READING IN BUILDING SCIENCE (1-3). Pr., departmental approval. May be taken more than one quarter.
680. SPECIAL PROBLEMS (1-5) Consult individual faculty member before registering.
690. CAPSTONE PROJECT (3). Pr., final quarter, graduate standing and departmental approval. Individual project in student's area of interest.

Chemical Engineering (CHE)

Professor Chambers, *Head*, Cullinan, Guin, Y. Lee, Maples, Neuman and Tarrer

Alumni Professors Curtis and Tatarchuck

Associate Professors El Halwagi and Krishnagopalan

Assistant Professors J. Lee, Placek and Roberts

Instructor Dunn

Non-engineering students may enroll in CHE 210 and higher courses only with departmental consent.

102. INTRODUCTION TO CHEMICAL ENGINEERING II. (1). Pr., high school chemistry. Role of the chemical engineer in process industries. Industries not addressed in CHE 101 are considered.
201. INTRODUCTION TO CHEMICAL ENGINEERING I (1). LAB. 3. Pr., high school chemistry. The role of the chemical engineer in the paper, chemical, plastics, petroleum, pharmaceutical and food industries and in environmental, biotechnology and biomedical and process design/control services. Includes field trips to industry and service locations.
210. PRINCIPLES OF CHEMICAL ENGINEERING (4). LEC. 3, LAB. 3. Pr., CH 112 or 104, PS 220. Application of principles of material balances to chemical processes.
211. CHEMICAL ENGINEERING THERMODYNAMICS I (4). LEC. 3, LAB. 3. Pr., CH 105 or 113, PS 220, EGR 201, completion of CHE 210 with a grade of C or better. Chemical engineering thermodynamics including multi-component energy balances plus non-ideal thermodynamics of multi-component mixtures involving phase changes and chemical reactions. Computer applications.
213. DIGITAL COMPUTERS IN CHEMICAL ENGINEERING (3). LEC. 1, LAB. 6. Pr., MH 163. Microcomputers and structured programming concepts. DOS Operating System and Pascal language programming.
310. PULP AND PAPER TECHNOLOGY (3). Pr., CH 104 or 112 or equivalent and sophomore standing. An overview of pulp manufacturing, bleaching, papermaking, coating and printing.
337. CHEMICAL ENGINEERING THERMODYNAMICS II (4). Pr., completion of CHE 211 and EGR 201 with grades of C or better. Thermodynamics of phase and chemical equilibrium.
361. TRANSPORT I (4). Pr., PS 220, MH 163; completion of CHE 210 with a grade of C or better. Coreq., EGR 201. Fluid mechanics. Includes fluid statics, conservation equations, incompressible and compressible fluid flows, measurement of flow and turbomachinery.

362. TRANSPORT II (4). Pr., EGR 201, MH 265; completion of CHE 361 with a grade of C or better. Heat transfer via conduction, convection and radiation; design of heat exchangers and evaporators.
363. TRANSPORT III (4). Pr., completion of CHE 362 with a grade of C or better. Mass transfer fundamentals and applications of mass transfer principles to the design of gas absorption, drying and humidification equipment.
365. CHEMICAL ENGINEERING ANALYSIS (3). Pr., MH 265; completion of CHE 213 and 362 with grades of C or better. Application of mathematical techniques to the analysis and solution of unsteady-state chemical engineering problems.
366. STAGewise OPERATIONS I (3). Pr., completion of CHE 211 and 213 with grades of C or better. Coreq., CHE 337. Principles, design and industrial applications of stagewise processes such as extraction and distillation.
367. FLUID/SOLID OPERATIONS (3). Pr., CHE 362. Non-ideal flows and multiphase systems.
370. CHEMICAL REACTION ENGINEERING (4). Pr., CHE 361, MH 265; completion of CHE 337 with a grade of C or better. Coreq., CHE 365. Design of chemical reactors with homogeneous reaction systems.
382. CHEMICAL ENGINEERING LABORATORY I (3). LEC. 1, LAB. 6. Pr., CHE 213; completion of CHE 211 and 362 with grades of C or better. Industrial chemical engineering equipment. Experimental study of heat and momentum transfer and other topics.
401. COAL PROCESSING TECHNOLOGY (3). Structure, properties, chemistry and utilization of coal.
402. SOLAR THERMAL PROCESSES (3). Pr., CHE 362. Solar energy fundamentals, solar heat transfer, solar heating devices.
409. INTRODUCTION TO PULP AND PAPER TECHNOLOGY (4). Pr., CH 104 or 112, EGR 201 or 220 and junior standing or departmental approval. An introductory course on the technology of pulp and paper manufacturing with emphasis on raw materials, pulping, bleaching, papermaking, coating and printing. For students with no previous formal pulp and paper training. Research paper.
410. PULP AND PAPER PROCESSING LABORATORY (3). LEC. 1, LAB. 6. Pr., EGR 201, CHE 310 or 409, 361 or ME 340, CHE 211 or ME 304. Experimental study of pulping and paper making operations.
412. SURFACE AND COLLOID SCIENCE (3). Pr., CH 508 and senior standing. Fundamentals of surface and colloid science with applications to foams, emulsions, thin films, froth floatation, detergency, biological phenomena, papermaking and tertiary oil recovery.
444. PROCESS DESIGN PRACTICE (2). LAB. 6. Coreq., CHE 545. Case studies in the application of chemical engineering principles to process synthesis and equipment design.
447. COMPUTER-AIDED PROCESS DESIGN (3). LEC. 1, LAB. 6. Pr., CHE 546. Case studies in process design.
450. SPECIAL TOPICS IN CHEMICAL ENGINEERING (CREDIT TO BE ARRANGED WITH A MAXIMUM OF 10 HOURS). Topical courses in special areas. May include laboratory work. May be taken more than once.
457. MICROCOMPUTER PROCESS DESIGN IN PULP AND PAPER INDUSTRY (3). LEC. 2, LAB. 3. Pr., CHE 556. Application of process simulation to problems encountered in the pulp and paper industry. Design of pulp and paper unit operations and processes.
461. TRANSPORT PHENOMENA (3). Pr., MH 265, CHE 210. Momentum, heat and mass transport in one-dimensional non-turbulent systems.
479. HONORS THESIS (3-6). Pr., junior standing, departmental approval. For honors program students only. Repeatable once for a maximum total of six hours.
486. CHEMICAL ENGINEERING LABORATORY II (3). LEC. 1, LAB. 6. Pr., CHE 366, 370, 382. Coreq., CHE 363. Experimental study of heat transfer, mass transfer, stagewise operations and reaction engineering.
487. CHEMICAL ENGINEERING LABORATORY III (3). LAB. 9. Pr., CHE 382, 366, 370. Comprehensive open-ended projects.
488. PULP AND PAPER ENGINEERING LABORATORY (3). LAB. 9. Pr. CHE 366, 370, 382, 410, 510. Comprehensive open-ended projects on pulp and paper topics.
490. DIRECTED READING (1). Pr., junior standing and departmental approval. Supervised study in specialized areas of chemical engineering.
499. UNDERGRADUATE RESEARCH (3). Pr., junior standing, departmental approval, GPA above 3.0. Individual and small group projects. May be taken twice for credit.

ADVANCED UNDERGRADUATE

510. PULP AND PAPER ENGINEERING (4). Pr., CHE 210, 310 or 409, 362 or ME 421. Coreq., ME 422. Chemical and engineering principles in the manufacture of pulp and paper.
- 512L. SURFACE AND COLLOID SCIENCE LABORATORY (1). LAB. 3. Coreq., CHE 512. Modern experimental techniques of surface and colloid science with applications to pulping and papermaking.
515. COMPUTER APPLICATIONS IN CHEMICAL ENGINEERING (3). LEC. 2, LAB. 3. Pr., CHE 361, MH 265; completion of CHE 211, 213 with grades of C or better. Advanced Turbo Pascal programming language concepts including applications to chemical engineering. Introduction to Minitab statistical software including applications to data acquisition process analysis.
516. PROCESS DYNAMICS AND CONTROL (4). Pr., CHE 366, 382, PS 222; completion of CHE 363, 365, 370 with grades of C or better. Coreq., EE 307. Dynamic modeling of chemical processes. Analysis of linear systems. Feedback systems. Analog controller design.
517. DIGITAL PROCESS CONTROL (4). Pr., CHE 516. Dynamic modelling of discrete chemical process systems. Analysis of discrete open-loop and closed-loop linear system. Digital controller design.

518. PROCESS DYNAMICS AND CONTROL LABORATORY (2). LAB. 6. Coreq., CHE 517. Lab experiments in classical and computer control. Computer simulation of control systems. Demonstration and practice of theory taught in CHE 516 and 517.
543. BUSINESS ASPECTS OF CHEMICAL ENGINEERING (3). Pr., senior standing or departmental approval. The flow of materials and money through the chemical processing industries; marketing; relationships with investors, employees, customers, competitors, suppliers, governments and the public.
545. PROCESS ECONOMICS AND DESIGN (3). Pr., completion of CHE 363, 365, 366 and 370 with grades of C or better. Coreq., CHE 382. Fundamentals and applications of process economics and design. Computer-aided cost estimation and profitability analysis.
546. COMPUTER-AIDED PROCESS SIMULATION (4). LEC. 2, LAB. 6. Pr., CHE 444 and 545. Fundamentals and applications of computer-aided process simulation. Case studies.
550. ADVANCED SPECIAL TOPICS IN CHEMICAL ENGINEERING (CREDIT TO BE ARRANGED WITH A MAXIMUM OF 10 HOURS). Pr., CHE 362, 366. Topic must be arranged with instructor before registration. Topical courses in areas for advanced undergraduate and graduate students. May include lab work. May be taken more than once. Topics require specific background to be determined by instructor during preregistration.
556. MICROCOMPUTER PROCESS SIMULATION IN PULP AND PAPER INDUSTRY (3). LEC. 2, LAB. 3. Pr., CHE 545. Fundamentals of microcomputer process simulation with applications to the pulp and paper industry. Design of pulp and paper unit operations and small scale processes using commercial simulation software.
560. INTRODUCTION TO PLASTICS (3). Pr., CHE 210. CH 208. High polymers. Includes the chemistry, technology and uses of cellulose, phenolics and amino plastics, polyolefins, vinyls, styrene, acrylics, polyesters, epoxies, polyamides, polyurethanes, silicones and rubbers.
565. HAZARDOUS MATERIALS MANAGEMENT (4). Pr., CH 203 or 208, CHE 444 or CE 520. Fundamental principles and regulatory information related to hazardous materials management and engineering.
585. AIR QUALITY ENGINEERING (4). Pr., CHE 363. Sources and chemical nature of air pollutants. Principles of mass transfer as related to the removal of air pollutants. Design calculations and engineering of air pollution control equipment including absorption and adsorption processes.
594. BIOSEPARATIONS PROCESSES (3). LEC. 3. Pr., CHE 363, 366. Fundamentals of commercial scale purification techniques for biologically produced materials.
595. BIOCHEMICAL ENGINEERING (3). Pr., CHE 370. Kinetics and process analysis for biochemical and biological processes. Introductory cell biochemistry.

COURSES FOR GRADUATE STUDENTS

600. CHEMICAL ENGINEERING ANALYSIS I (3). Pr., graduate standing. Mathematical analysis of chemical engineering problems to include the formulation of differential equations, analytical and numerical techniques for problem solution, data correlation and analysis and computer applications.
610. TRANSPORT PHENOMENA I (3). Coreq., CHE 600. Principles of momentum, heat and mass transport in nonturbulent systems.
611. TRANSPORT PHENOMENA II (3). Pr., CHE 610. Continuation of CHE 610 with applications to turbulent systems.
620. CHEMICAL ENGINEERING THERMODYNAMICS I (3). Pr., graduate standing. Properties of real gases and liquids. Chemical and phase equilibrium.
625. REACTION ENGINEERING I (3). Pr., CHE 610. Analysis and design of chemical reactors.
632. PROCESS MODELING AND SIMULATION (3). Pr., CHE 600. Mathematical modeling of chemical process systems. Process simulation with digital simulation languages.
640. DISTILLATION (3). Pr., departmental approval and graduate standing. Design principles for multicomponent, extractive, azeotropic and other complex distillation processes.
641. ABSORPTION AND EXTRACTION (3). Pr., departmental approval and graduate standing. Design principles for gas absorption and extraction processes.
642. HEAT TRANSFER (3). Pr., departmental approval and graduate standing. Analysis and design principles for advanced heat transfer processes. Emphasis on two-phase heat transfer in reaction systems, packed beds and other process equipment.
645. POLYMER ENGINEERING (3). Pr., departmental approval and graduate standing. Structure of polymers, molecular forces and properties, polymer formation and modification, kinetics of polymerization, polymer technology and applications.
646. PROCESS ECONOMICS (3). Pr., departmental approval and graduate standing. Venture analysis, project justification, cost estimation and project engineering.
647. CHEMICAL-PHYSICAL TREATMENT OF WASTE WATER (3). Pr., CHE 326, 363. Chemical oxidation, adsorption, flocculation and coagulation and ion exchange as applied to the treatment of waste water.
650. SPECIAL TOPICS IN CHEMICAL ENGINEERING (CREDIT TO BE ARRANGED.) Pr., departmental approval. May be taken more than one quarter.
670. SEMINAR (1). Pr., graduate standing. May be taken more than one quarter.
690. DIRECTED READING IN CHEMICAL ENGINEERING (CREDIT TO BE ARRANGED.) Pr., departmental approval. May be taken more than one quarter.
699. RESEARCH AND THESIS (CREDIT TO BE ARRANGED.) May be taken more than one quarter.
701. CHEMICAL ENGINEERING ANALYSIS II (3). Pr., CHE 600. Numerical methods for the solution of chemical engineering problems. Computer application.
721. CHEMICAL ENGINEERING THERMODYNAMICS II (3). Pr., CHE 620. Phase equilibrium of non-electrolytes.

Chemistry

722. ENGINEERING STATISTICAL THERMODYNAMICS I (3). Pr., CHE 620. Fundamentals of statistical mechanics, partition functions, chemical equilibrium.
723. ENGINEERING STATISTICAL THERMODYNAMICS II (3). Pr., CHE 622. Applications of molecular theory and models to the properties of real gases and liquids.
726. REACTION ENGINEERING II (3). Pr., CHE 625. A continuation of CHE 625.
727. HETEROGENEOUS CATALYSIS (3). Pr., departmental approval and graduate standing. Surface reactions, catalytic processes, catalyst characterization methods.
730. PROCESS DYNAMICS AND CONTROL I (3). Coreq., CHE 600. Advanced linear control system analysis and an introduction to nonlinear systems.
731. PROCESS DYNAMICS AND CONTROL II (3). Pr., CHE 630. An introduction to modern control theory with emphasis on chemical reactors and stagewise processes.
733. OPTIMIZATION (3). Pr., departmental approval. Analytical and numerical optimization techniques. Maxima and minima of functions of several variables, constraints, linear and non-linear programming methods.
799. RESEARCH AND DISSERTATION (CREDIT TO BE ARRANGED.) May be taken more than one quarter.

Chemistry (CH)

Professors Hargis, *Head*, Aull, Friedman, Hill, Illies, McKee, Neely, Schneller, Shevlin,
Stanbury and Worley

Associate Professors Donnelly, Kohl, Livant, Mills, Parish, Squillacote and Webb

Assistant Professors Bakker, Blumenthal, Cammarata, Shannon and Wernette

Adjunct Instructor Milly

101. INTRODUCTORY CHEMISTRY I (2). LEC. 3. Pr., or Coreq., MH 140, 160 or 161. Acquaints science students with the classifications of matter and the manner in which the chemist identifies matter and records the nature of its changes. Atomic structure, chemical bonding, molecular aggregations and the laws summarizing the properties and nature of the physical states of matter are considered.
102. INTRODUCTORY CHEMISTRY II (2). LEC. 3. Pr., CH 101. Continuation of CH 101.
103. FUNDAMENTALS OF CHEMISTRY I (4). LEC. 4. Pr., high school chemistry. Coreq., MH 160 or 161. Encompasses the subject matter of CH 101 and 102 for students with adequate background preparation.
- 103L. GENERAL CHEMISTRY LABORATORY (1). LAB. 3. Pr. or Coreq., CH 102 or 103. The basic laboratory techniques to experimental measurements and to the interpretation of data.
104. FUNDAMENTALS OF CHEMISTRY II (4). LEC. 4. Pr., CH 102 or 103. A continuation of CH 102 or 103. The methods of preparation and the reactions of individual as well as classes of chemical compounds are used to study and illustrate the mechanism and dynamics of chemical change.
- 104L. GENERAL CHEMISTRY LABORATORY (1). LAB. 3. Pr., CH 103L. Pr. or Coreq., CH 104. Continuation of CH 103L.
105. FUNDAMENTALS OF CHEMISTRY III (4). LEC. 4. Pr., CH 104. Solution chemistry including various ionic equilibria, coordination compounds, acid-base phenomena and redox processes. Quantitative analytical problem-solving will be emphasized.
- 105L. GENERAL CHEMISTRY LABORATORY (1). LAB. 3. Pr., CH 104L. Pr. or Coreq., CH 105. Continuation of CH 103L/104L.
111. GENERAL CHEMISTRY (4). Coreq., MH 160 or 140 or 161. Also 111L. For chemistry majors and others in related areas. Credit in CH 101, 102 or 103 precludes credit for this course.
- 111L. GENERAL CHEMISTRY LABORATORY (1). LAB. 3. Coreq. CH 111. The basic laboratory techniques to experimental measurements and to the interpretation of data.
112. GENERAL CHEMISTRY (4). Pr., CH 111 or 103. Coreq. 112L. Continuation of CH 111. Credit in CH 104 precludes credit for this course.
- 112L. GENERAL CHEMISTRY LABORATORY (1). LAB. 3. Pr., 111L. Coreq. CH 112. Continuation of CH 111L.
113. GENERAL CHEMISTRY (4). Pr., CH 112. Coreq. 113L. Continuation of CH 112. Credit in CH 105 precludes credit for this course.
- 113L. GENERAL CHEMISTRY LABORATORY (1). LAB. 3. Pr., 112L. Coreq. CH 113. Continuation of CH 112L.
172. HONORS GENERAL CHEMISTRY I (4). Pr. or Coreq., MH 161. General chemistry for students in the honors program. Consideration of the concepts of chemical structure, chemical changes and energy relationships.
- 172L. HONORS GENERAL CHEMISTRY LABORATORY (1). LAB. 3. Pr. or Coreq., CH 172. The experimental methods of observing chemical phenomena which includes data gathering and interpretation.
173. HONORS GENERAL CHEMISTRY II (4). Pr., CH 172. Continuation of CH 172.
- 173L. HONORS GENERAL CHEMISTRY LABORATORY (1). LAB. 3. Continuation of CH 172L.
203. ORGANIC CHEMISTRY (5). Pr., CH 104. Fundamentals of organic chemistry. For students in Human Sciences and others.
207. ORGANIC CHEMISTRY (4). LEC. 4. Pr., CH 104. This course together with CH 208 meets the needs of students in Laboratory Technology, Pre-Medicine, Pre-Dentistry, Pre-Veterinary Medicine, Pre-Pharmacy and in other biological sciences.
- 207L. ORGANIC CHEMISTRY LABORATORY (1). LAB. 3. Pr., or Coreq., CH 207.
208. ORGANIC CHEMISTRY (3). LEC. 3. Pr., CH 207 and 207L. Continuation of CH 207.

- 208L. ORGANIC CHEMISTRY LABORATORY (2). LAB. 6. Pr., or Coreq., CH 208.
209. ORGANIC CHEMISTRY (4). LEC. 4. Pr., CH 208. A continuation of CH 208 with emphasis on those organic compounds considered to be the most important to the understanding of biochemistry; i.e., polyfunctional compounds, carbohydrates, liquids, amino acids, proteins and heterocyclic compounds.
- 209L. ORGANIC CHEMISTRY LABORATORY (2). LAB. 6. Pr., CH 208L.
305. ANALYTICAL CHEMISTRY (3). LEC. 3. Pr., CH 105 and 105L or 113. Theory and application of gravimetric, volumetric and colorimetric chemical analysis.
- 305L. ANALYTICAL CHEMISTRY LABORATORY (2). LAB. 8. Pr., or Coreq., CH 305. Analytical techniques applied to the analysis of ores and minerals.
316. PHYSICAL CHEMISTRY (5). Pr., MH 140 or 160, CH 105, PS 205. Course for pre-medicine students.
470. HONORS READINGS AND SPECIAL TOPICS (3-6). Pr., admission to University Honors Program; junior or senior standing. May be repeated once for a maximum of six hours. Open only to students in the Honors Program with the consent of the Honors Program Advisor.
490. SPECIAL PROBLEMS IN CHEMISTRY (5). LAB. 15. Pr., departmental approval and senior standing. Not open to graduate students. An individual problem course. Each student will work under the direction of a staff member on some problem of mutual interest. May be repeated for a maximum of 15 credit hours.
495. UNDERGRADUATE SEMINAR (1). Pr., junior standing. Oral presentation and discussion of research in the area of specialization. May be repeated for credit up to the limit permitted in respective curriculum model.

ADVANCED UNDERGRADUATE AND GRADUATE

504. INTRODUCTION TO MOLECULAR ORBITAL METHODS (5). Pr., CH 209 and 508 or equivalent. Elementary quantum mechanics. Huckel molecular orbital theory, SCF molecular orbital procedures, orbital symmetry problems and applications of the various theoretical procedures to organic chemistry.
507. PHYSICAL CHEMISTRY (4). LEC. 4. Pr., CH 104 or 112; MH 264; PS 221 or 206. A discussion of the more important theories and laws of physical chemistry.
- 507L. PHYSICAL CHEMISTRY LABORATORY (1). LAB. 3. Pr. or coreq., CH 507.
508. PHYSICAL CHEMISTRY (4). LEC. 4. Pr., CH 507. Continuation of CH 507.
- 508L. PHYSICAL CHEMISTRY LABORATORY (1). LAB. 3. Pr. or coreq., CH 508. Pr., 507L.
509. PHYSICAL CHEMISTRY (4). LEC. 4. Pr., CH 508. An extension of principles in CH 507-508 with special reference to modern theories of the structure of matter.
- 509L. PHYSICAL CHEMISTRY LABORATORY (1). LAB. 3. Pr. or coreq., CH 509. Pr., 508L.
510. INTERMEDIATE INORGANIC CHEMISTRY I (5). LEC. 5. Pr., CH 508. Fall. Atomic structures, valence bonding and periodic properties of the elements.
511. INTERMEDIATE INORGANIC CHEMISTRY II (5). LEC. 3, LAB. 6. Pr., CH 510. Winter. Synthesis and purification of typical inorganic compounds.
512. CHEMICAL THERMODYNAMICS (5). Pr., CH 508. Winter. Basic laws governing changes in energy in gases, liquids and solids.
513. ANALYTICAL CHEMISTRY (5). LEC. 3, LAB. 6. Pr., CH 507. Spring. Fundamental concepts used in instrumental analytical chemistry and as observed in the laboratory via spectrophotometric, electroanalytical and chromatographic techniques.
518. BIOCHEMISTRY (4). Pr., CH 208. Molecular structure: classification, structure and reactions of the major chemical constituents of living matter. Also includes binding phenomena and bioenergetics.
- 518L. BIOCHEMISTRY LABORATORY (1). LAB. (3). Coreq., CH 518. Identification and quantification of compounds from the important biochemical classes. Examples include amino acid chromatography, dipeptide sequencing, glucose concentration, etc. (Same as ADS 518L.)
519. BIOCHEMISTRY (4). Pr., CH 518 or equivalent. Metabolism: survey of design and regulation of the major catabolic and biosynthetic (including photosynthesis) metabolic pathways. An overview of the flow of genetic information is also included.
- 519L. BIOCHEMISTRY LABORATORY (1). LAB. (3). Coreq., CH 519. Partial purification, kinetic studies and characterization of enzymes and nucleotides from various plants, animals and bacteria. (Same as ADS 519L.)
520. CLINICAL BIOCHEMISTRY (5). LEC. 3, LAB. 6. Pr., CH 519 or equivalent. Spring. Principles of clinical chemical analysis.
521. BIOCHEMISTRY (4). Pr., CH 518 or equivalent. Spring. Molecular transmission of genetic information. Chemical and biochemical aspects of structure, function and synthesis of nucleic acids, the genetic code, protein biosynthesis, recombinant DNA technology and other topics in biotechnology.
530. ADVANCED GENERAL CHEMISTRY (5). LEC. 4, LAB. 3. Pr., CH 207 or departmental approval, junior standing. An in-depth study of chemistry topics that are traditionally included in high school chemistry. Not available for credit to students in the areas of science, mathematics or engineering.

COURSES FOR GRADUATE STUDENTS

610. ADVANCED INORGANIC CHEMISTRY (5). LEC. 5. Pr., CH 510 or equivalent. Winter. A survey of the most active areas of modern inorganic chemistry with an emphasis on structure, bonding and reactivity.
611. PHYSICAL METHODS IN INORGANIC CHEMISTRY (5). LEC. 5. Pr., CH 610 or equivalent. Spring, odd years. The theory and application of techniques for obtaining structural and bonding information in inorganic compounds, including multinuclear NMR, FT IR, FT Raman, Mass Spectroscopy, X-ray diffraction, electronic absorption and emission.

612. ORGANOMETALLIC CHEMISTRY (5). LEC. 5. Pr., CH 610 or equivalent. Fall, even years. Recent developments in main group transition metal, lanthanide and actinide organometallic chemistry.
614. THE CHEMISTRY OF COORDINATION COMPOUNDS (5). LEC. 5. Pr., CH 610 or equivalent. Synthetic techniques, kinetics and mechanisms of substitution and electron transfer reactions, determining and interpreting stability constants and other thermodynamic information.
616. ADVANCED TOPICS IN INORGANIC CHEMISTRY (5). LEC. 5. Pr., CH 610 or equivalent. Fall, odd years. The most active research areas of modern inorganic chemistry.
620. ADVANCED ORGANIC CHEMISTRY I (5). LEC. 5. Pr., CH 209 or equivalent. Fall. Organic reaction mechanisms, free radicals, carbonium ions, carbonions, carbenes, etc.
621. ADVANCED ORGANIC CHEMISTRY II (5). LEC. 5. Pr., CH 620. Winter. Physical organic chemistry with emphasis on the interpretation of organic reaction mechanisms.
622. ADVANCED ORGANIC CHEMISTRY III (5). LEC. 5. Pr., CH 620. Spring. Current synthetic method of organic chemistry.
627. SPECIAL TOPICS IN ORGANIC CHEMISTRY (5). Pr., CH 621 or equivalent. Topics in organic chemistry.
628. INTRODUCTION TO THEORETICAL ORGANIC CHEMISTRY (5). Pr., departmental approval. Fall. The application of quantum mechanics and molecular orbital theory in deducing chemical structure and stability and to analyzing the energy changes involved in chemical reactions will be discussed.
630. ADVANCED PHYSICAL CHEMISTRY (5). Pr., CH 509. Spring. This course is composed of a series of topics of general and current interest and may vary from year to year. Topics generally considered include kinetic theory of matter, modern theories of the structure of matter, generalized thermodynamics, relation of molecular structure to spectroscopic and thermodynamic properties and kinetics of chemical reactions.
632. CURRENT TOPICS IN PHYSICAL CHEMISTRY (5). Pr., CH 630. Modern topics in advanced physical chemistry.
633. CHEMICAL KINETICS (5). Pr., CH 509 or equivalent. Fall, odd years. Theoretical and experimental aspects of reaction rates. The mathematics and characterization of chemically reacting systems include discussions of the collision theory, the transition state theory, unimolecular reactions, reactions in condensed phases, behavior of non-stationary-state systems and photochemistry.
636. STATISTICAL THERMODYNAMICS (5). Pr., CH 630. Winter, even years. Statistical approach to thermodynamics and chemical equilibrium.
637. INTRODUCTION TO QUANTUM CHEMISTRY (5). Pr., CH 630. Winter, odd years. Quantum theory as applied to chemical problems.
638. MOLECULAR SPECTROSCOPY (5). Pr., CH 630. Fall, even years. Theory and application of optical and magnetic resonance spectroscopy.
640. BIOCHEMISTRY (5). Pr., CH 208 or equivalent. Fall. Introduction to biochemistry for graduate students. Classification, structure, reactions, properties and characterization of the major constituents of living matter: water, amino acids, proteins, enzymes, coenzymes, carbohydrates, lipids and nucleic acids. Credit for this course precludes credit for CH 518.
641. PROTEINS (5). Pr., CH 507 and CH 519 or equivalent. Spring. Chemical and physical properties of amino acids and proteins, protein structure and the relation of protein structure to function.
643. ENZYMES (5). Pr., CH 519 or equivalent. Winter. The principles of enzyme chemistry including the physical, chemical and catalytic properties of enzymes.
644. TOPICS IN BIOCHEMISTRY (1-10). (CREDIT TO BE ARRANGED.) Pr., CH 519 or equivalent and departmental approval. Advanced study in selected areas of metabolism and the techniques for characterization of macromolecules.
645. BIOCHEMICAL RESEARCH TECHNIQUES (5). Pr., CH 519 or equivalent. Summer. Modern biochemical laboratory techniques.
646. METABOLISM AND BIOCHEMICAL GENETICS (5). Pr., CH 640 or equivalent. Winter. Intermediary metabolism: survey of design and regulation of the major catabolic and anabolic pathways, including photosynthesis. Biochemical aspects of the transmission of genetic information, protein biosynthesis, recombinant DNA technology and site specific mutagenesis.
650. ANALYTICAL CHEMISTRY (5). Pr., CH 513 or equivalent. Winter. Analytical principles, applications and methods, mathematical interpretations and current developments.
651. ANALYTICAL CHEMISTRY (5). LEC. 4, LAB. 3. Pr., CH 513. Spring. Analytical application of electrochemistry.
652. THEORIES AND CURRENT TOPICS OF ANALYTICAL CHEMISTRY (5). Pr., 651.
653. PHYSIO-CHEMICAL SEPARATIONS (5). LEC. 4, LAB. 3. Pr., CH 509.
654. RADIOCHEMICAL ANALYSIS (5). LEC. 3, LAB. 6. Pr., CH 305. The application of radioactive tracers and related techniques to chemical analysis.
655. CHEMICAL INSTRUMENTATION (5). LEC. 5. Chemical transducers and conversion of the transducer output to some usable form.
670. SEMINAR (1). Required course for all graduate students in Chemistry offered each quarter except Summer Quarter. Total credit may not exceed 10 hours.
691. DIRECTED INDIVIDUAL STUDY IN CONTEMPORARY CHEMISTRY (CREDIT TO BE ARRANGED.) Pr., completion of 30 hours of graduate courses in chemistry. May be taken more than one quarter.
699. RESEARCH AND THESIS (CREDIT TO BE ARRANGED.) May be taken more than one quarter.
799. RESEARCH AND DISSERTATION (CREDIT TO BE ARRANGED.) May be taken more than one quarter.

Civil Engineering (CE)

Professors Judkins, *Head*, Benefield, R. Brown, Güven, Melville, Parker and Tedesco
Feagin Professor Ramey
Gottlieb Professor Yoo

Associate Professors Bowman, D. Brown, Elton, Morgan and Vecellio
Gottlieb Associate Professor Stallings

Assistant Professors Crowley, Kramer, Lange, Pittman, Stroup-Gardner and Vermace

General Curriculum (CLA) students (those with undeclared majors) may enroll only with departmental consent.

200. INTRODUCTION TO CIVIL ENGINEERING (1). LEC. 1. Orientation to civil engineering. S/U grading.
201. SURVEYING (3). LEC. 2, LAB. 3. Coreq., CE 202. Data collection and analysis emphasized. Analysis of errors, distance and angle measurements; leveling; traversing; simple curves; topographic mapping and construction surveying.
202. COMPUTER APPLICATIONS IN CIVIL ENGINEERING (3). LEC. 2, LAB. 3. Pr., MH 163 and CSE 120. Computer programming using FORTRAN computer solutions of civil engineering problems, library programs, computer graphics and microcomputer applications.
206. CIVIL ENGINEERING MECHANICS (3). Pr., EGR 205. Coreq., EGR 207. Continuation of EGR 205 and 207 with emphasis on civil engineering topics. First moments, centroids and centers. Second moments and moments of inertia. Friction, equilibrium, material properties and behavior. Beam behavior and column buckling.
300. ENGINEERING SCIENCE APPLICATIONS (1). LEC. 2. Pr., junior standing in CE. Applications of engineering science subject matter to CE problems to help students improve their understanding and working knowledge of both theory and applications. S/U grading.
301. CIVIL ENGINEERING ANALYSIS (3). Pr., MH 265, CE 202. Applications of calculus and ordinary differential equations, numerical methods, vector algebra and linear algebraic equations to civil engineering problems.
303. CIVIL ENGINEERING STATISTICS (4). Pr., MH 264, CE 202. Probability concepts, distributions, estimation, hypothesis testing, regression, correlation analysis, emphasis on civil engineering applications.
310. HYDRAULICS I (3). Coreq., CE 301, EGR 201, 235. Fundamental concepts of fluid mechanics, hydrostatics, kinematics, ideal flow, viscous effects, transport phenomena, drag, laminar and turbulent flow in pipes and channels.
311. HYDRAULICS II (3). Pr., CE 310. Applications of fluid mechanics, pipe flow, fluid measurements, pipe networks, pumps, open channel, dimensional analysis and theory of modeling.
- 311L HYDRAULICS LABORATORY (1). Coreq., CE 311. Laboratory experiments and demonstrations, pipe flow, pumps, open channels, gates, weirs, analysis and presentation of hydraulic data.
320. URBAN HYDRAULIC SYSTEMS DESIGN (3). Pr., CE 310. Design of water collection and distribution facilities and waste collection systems.
350. HIGHWAY ENGINEERING I (3). Pr., CE 201, junior standing. Introduction to highway engineering practice with emphasis on facility design and operation. Topics include highway system characteristics; transportation planning; traffic operations and control; driver, vehicle and roadway characteristics; geometric designs; and highway safety.
360. THEORY OF STRUCTURES I (4). LEC. 3, LAB. 3. Pr., CE 206, EGR 207. Coreq. CE 301. Basic structural analysis of determinate structures, deflection curves, influence lines and their application on determinate structures, column buckling. Lab sessions on the properties of structural materials and fundamental behavior of solids.
362. THEORY OF STRUCTURES II (3). Pr., CE 360. Structural analysis of indeterminate structures using geometric and energy methods. Influence lines for indeterminate structures. Approximate methods.
382. CIVIL ENGINEERING MATERIALS (4). LEC. 3, LAB. 3. Pr., junior standing. Introduction to common civil engineering materials used in construction of civil facilities including building highways, etc. Materials to be included are concrete, wood, asphalt, steel and aggregates.
400. ADVANCED SURVEYING AND MAPPING (5). LEC. 4, LAB. 3. Pr., junior standing. Programming principles and measuring are emphasized. Topics from map projections, electronic and special instruments: geodesy.
401. PROFESSIONAL PRACTICE (1). LEC. 1. Pr., senior standing. Professional engineering business, management, liabilities, registration and ethics. Owner/designer/constructor team. Types of human behavior and interacting with people. Technical communications. S/U grading.
412. HYDROLOGY (3). Pr., CE 311, CE 303. Hydrologic cycle, precipitation, infiltration, runoff, unit hydrograph, rational method, evaporation, flood routing, ground water, frequency analysis, synthetic data generation.
420. WATER TREATMENT (3). Coreq., CE 320. Theory, design and operation of water treatment facilities.
421. WASTEWATER TREATMENT (4). LEC. 3, LAB. 3. Pr., CE 420. Theory, design and operation of wastewater treatment facilities.
422. ENVIRONMENTAL ENGINEERING DESIGN I (5). Pr., CE 421. Process design of environmental engineering systems.
423. ENVIRONMENTAL ENGINEERING DESIGN II (5). Pr., CE 311, 421. Hydraulic design of environmental engineering systems.
428. RADIOLOGICAL HEALTH ENGINEERING (3). Pr., senior standing. Sources and properties of radiation, ionizing effects, biological effects, dosimetry, detection and measurement, design of radiation shielding, decontamination, disposal of wastes, legal aspects of radiation control, public attitudes.

430. INTRODUCTION TO SOIL MECHANICS (4). LEC. 3, LAB. 3. Pr., CE 301, GL 315. Physical properties of soils; subsurface investigations; clay mineralogy; soil classification; concept of effective stress; consolidation theory; time-settlement analyses; soil compaction and shear strength.
431. SOIL AND FOUNDATION ENGINEERING (3). Pr., CE 430. Slope stability; vertical and lateral soil pressures; bearing capacity; foundations.
440. CONTRACTS AND SPECIFICATIONS (3). Coreq., CE 460, senior standing. Legal and technical principles of construction contract documents. Drawings, plans and specifications, contract law, professional liability and ethics.
441. INTRODUCTION TO CONSTRUCTION (3). Pr., departmental approval. Basic concepts of the construction industry and practices, contracts and specifications and construction management methods and tools.
450. TRAFFIC ENGINEERING FUNDAMENTALS (3). Pr., CE 350. The fundamental elements of traffic engineering including traffic studies, traffic operations and traffic control devices.
452. AIRPORT DESIGN (4). Pr., CE 350 or departmental approval. An analysis of the elements affecting the design of airports including runway configuration, capacity analyses, geometric design of runways and taxiways, pavement design and airfield drainage.
454. HIGHWAY ENGINEERING II (3). Pr., CE 350, ISE 360. Planning and development of highway projects; preparation of project plans; earthwork; pavement and drainage design; construction and maintenance practices.
460. REINFORCED CONCRETE DESIGN I (3). Pr., CE 360. Concrete properties. Design synthesis and analysis of reinforced concrete beams, slabs and columns. Reinforcement detail.
465. STEEL DESIGN I (3). Pr., CE 360. Steel properties. Design synthesis and analysis of steel members in tension, compression, shear and flexure. Structural fasteners.
479. HONORS THESIS (3-6). Pr., department head approval. Individual student endeavor consisting of directed research and writing of honors thesis. (CE Honors Program students only. May be repeated once for a maximum of six total credit hours.)
490. SPECIAL PROBLEMS. (CREDIT 1-5). Pr., department head approval. Individual student endeavor under staff supervision involving special problems of an advanced nature in civil engineering.
491. CONCRETE DESIGN PROJECT (5). LEC. 3, LAB. 6. Pr., EH 404, CE 382, 421, 431, 460. Group design projects involving both analysis and synthesis and culminating in a formal presentation and report. Emphasis on the design process, creative thinking, synthesis, teamwork and communications.

ADVANCED UNDERGRADUATE AND GRADUATE

511. OPEN CHANNEL DESIGN (3). Pr., CE 311. Fundamental concepts, uniform flow, rapidly varied flow, gradually varied flow, subcritical and supercritical flow, water surface profiles, energy dissipation, introduction to transient phenomena.
513. COASTAL ENGINEERING. (3). Pr., CE 311. Basic wave theory, diffraction, reflection, refraction, wind waves generation, wave effects on structures and sediments.
515. SUBSURFACE HYDROLOGY (3). Pr., CE 311. Soil moisture and groundwater, geology of groundwater, principles of groundwater flow, regional flow systems, flow to wells.
516. SUBSURFACE HYDRAULIC MEASUREMENTS (3). Pr., CE 515 or departmental approval. Measurement of hydraulic conductivity, porosity and other properties using slug tests, pumping tests and flowmeter tests. Design of hydraulic tests, pumping wells, observation wells and monitoring wells.
517. WATER RESOURCES ENGINEERING (3). Pr., CE 311, 412. Uses and sources of water; economic, hydrologic, hydraulic, environmental and legal aspects of design and operation of water-resource systems; multi-purpose projects; irrigation, hydroelectric power generation and flood control.
518. STORMWATER DRAINAGE DESIGN (3). Pr., CE 312. Urban, highway and airfield storm runoff estimation. Flood plain prediction and management. Hydraulic design of stormwater drainage systems, inlets, storm sewers, open channels, culverts, detention basins.
520. ENVIRONMENTAL ENGINEERING CHEMISTRY I (3). Pr., departmental approval. Equilibrium chemistry aspects of environmental engineering.
- 520L. ENVIRONMENTAL ENGINEERING CHEMISTRY I LABORATORY (1). Pr., departmental approval, Coreq., CE 520. Laboratory testing procedures and experiments relating to the treatment of waters and wastes.
521. ENVIRONMENTAL ENGINEERING CHEMISTRY II (3). Pr., CE 520 or departmental approval. Numerical and graphic techniques associated with physical, chemical and biological aspects of environmental engineering.
- 521L. ENVIRONMENTAL ENGINEERING CHEMISTRY II LABORATORY (1). Pr., CE 520 and 520L or departmental approval. Coreq. CE 521, Continuation of CE 520L. Laboratory testing and experiments related to water and waste treatments.
523. ENVIRONMENTAL HEALTH ENGINEERING (3). Pr., departmental approval. Application of engineering methodology to communicable disease control, insect and rodent control, milk and food sanitation, noise control, industrial hygiene, refuse collection and hazardous waste management.
524. AIR POLLUTION (5). Pr., departmental approval. The nature, sources and effects of polluting materials including gases, dusts, vapors and fumes and the relations of atmospheric conditions to their dispersal. Introduction to theory and design of air pollution control devices and sampling programs. Legal aspects of air pollution.

527. FUNDAMENTALS OF WATER SUPPLY AND WASTE TREATMENT (5). Pr., departmental approval. (Not for credit for civil engineering students). The principles of water supply and waste disposal and the chemistry and biology of water and waste treatment will be presented. Alternatives in water supply and waste disposal will be considered and the theory of treatment operations will be discussed. Lab exercises will be conducted.
528. FUNDAMENTALS OF ADVANCED WATER AND WASTEWATER TREATMENT (3). Pr., departmental approval. (Not for graduate credit for civil engineering students.) Principles of various methodologies for advanced water and wastewater treatment will be discussed. Economic trade-offs and process selection will be emphasized.
530. SHALLOW FOUNDATION DESIGN (3). Pr., CE 431. Design of spread footings, combined footings, mat foundations, rigid and flexible retaining walls.
531. DEEP FOUNDATION DESIGN (3). Pr., CE 431. Single piles, vertical and lateral loads, pile installation, pile groups, field load tests, drilled shafts and caissons. Design and construction methods.
532. EARTH RETAINING STRUCTURES DESIGN (3). Pr., CE 431 or equivalent. Lateral earth pressure, gravity and cantilever walls, reinforced soil, soil nailing, anchored bulkheads and braced excavations. Design project.
538. EARTH DAM ENGINEERING (3). Pr., CE 431. Earth dam design and construction. Material selection, filter design. Flownets in earth dams. Stability analysis of earth dams.
542. CONSTRUCTION MANAGEMENT (3). Pr., senior standing. Project planning and scheduling, estimating and bidding, labor law, labor productivity, project safety.
544. CONSTRUCTION EQUIPMENT AND METHODS (3). Pr., senior standing. Selection of equipment for heavy construction operations; Production rates, owning and operating costs, optimizing equipment mix. Construction methods; formwork, compressed air and dewatering systems, blasting.
550. TRAFFIC ENGINEERING ANALYSIS (3). Pr., CE 350. Traffic engineering emphasizing capacity analyses.
551. TRAFFIC CONTROL SYSTEMS DESIGN (4). Pr., CE 350. Fundamental design concepts for highway traffic control systems. Control requirements and warrants; hardware operation and equipment selection; development and implementation of timing plans for isolated intersections and intersection networks.
553. GEOMETRIC DESIGN (4). Pr., CE 350. An analysis of the elements affecting the location and design of rural highways, urban highways and arterial streets including design controls and criteria, cross-section elements, intersection design, interchange design and social and environmental considerations.
554. FREEWAY PLANNING AND OPERATIONS (3). Pr., CE 350. Planning, design and operation of urban freeways and expressways and rural interstate facilities. Topics include project planning and development; design concepts and criteria; interchange and ramp design; capacity analysis; freeway operations; surveillance and control systems.
556. TRANSPORTATION PLANNING (3). Pr., CE 350 or departmental approval. The planning process for urban and regional transportation development. Topics include planning objectives and data requirements; planning inventories; modeling of trip-making behavior; development and evaluation of alternative plans; transportation system management concepts.
558. RAILWAY ENGINEERING (3). Pr., CE 350. Fundamental elements affecting the planning, design and operations of rail systems.
560. REINFORCED CONCRETE DESIGN II (3). Pr., CE 460. Coreq., CE 362. Building assemblages. USD for beams; T-beams; doubly reinforced beams; long columns and beam-columns; one way and two way slabs; footings; retaining walls. Interpretation of codes. Serviceability check.
562. PRESTRESSED CONCRETE DESIGN (3). Pr., CE 460. Coreq., CE 362. Properties and behavior of prestressed concrete. Prestressing systems and end anchorages. Loss of prestress. Analysis and design of beams for flexure. Camber, deflection and cable layout.
565. STEEL DESIGN II (3). Pr., CE 465. Coreq., CE 362. Structural assemblages. Interpretation of codes; analytical verification of lateral frames.
567. COMPUTER METHODS IN STRUCTURAL ENGINEERING (3). Principles of matrix formulations of structural problems; force and displacement methods. Algorithms for computer programs for analysis of trusses, beams and frames. Use of computer programs, p columns, floor and wall assembly and wood formwork. Timber trusses and laminated arches.
568. STRUCTURAL DYNAMICS I (3). Free and forced vibration of single degree of freedom systems. Identification of dynamic loads. Response spectra.
569. TIMBER DESIGN (3). Pr., CE 360. Properties and behavior of timber and plywood. Design of timber beams, columns, floor and wall assembly and wood formwork. Timber trusses and laminated arches.
570. WIND ENGINEERING (3). Pr., CE 362; CE 460; or CE 465. Wind phenomena and wind pressures on structures; effects of wind on structures and damage mechanism; building codes, standards and procedures pertaining to wind engineering; design of wind resistant structures.
582. OPTIMIZATION METHODS (3). Pr., CE 301. Applications of calculus, linear programming and dynamic programming to civil engineering systems.
583. SIMULATION METHODS (3). Pr., CE 303. Monte Carlo methods; continuous variable simulations, applications of discrete variable simulation languages to civil engineering systems.
584. SOIL STABILIZATION (3). Pr., CE 430 or equivalent; junior standing. Methods of stabilizing soft soil; consolidation, compaction with the use of lime, cement and other additives; construction operations, costs and field control related to soil stabilization.

585. ASPHALT TECHNOLOGY (3). LEC. 2, LAB. 3. Pr., CE 382. Production and uses of asphalt; measurement and significance of laboratory properties of asphalt, including viscosity, penetration, flashpoint, ductility, solubility, thin film oven test and specific gravity; measurement of asphalt mix properties, including Marshall Stability and maximum specific gravity.
587. PAVEMENT DESIGN (3). Pr., CE 350, 382, 430. Material characterization, pavement response models, pavement performance models, structural design systems.
589. PAVEMENT CONSTRUCTION (3). Pr., CE 382. Methods, equipment and quality control for pavement materials production and placement; materials include soils, granular layers, asphalt concrete, surface treatment and Portland Cement Concrete; description of plans and specifications for each material.
590. SPECIAL PROBLEMS (CREDIT 1-5). Pr., department head approval; may be taken more than one quarter. Staff supervision of advanced, individual student investigations of specialized problems in civil engineering.

COURSES FOR GRADUATE STUDENTS

605. GROUNDWATER HYDRAULICS I (3). Pr., CE 515 or departmental approval. Fluid flow in porous media, potential flow theory, confined and unconfined flow, well flow, dispersion, hydrothermal problems, modeling.
606. GROUNDWATER HYDRAULICS II (3). Pr., CE 605. Continuation of CE 605. Additional treatment of flow to wells, coastal hydrology and current literature.
607. NUMERICAL METHODS IN HYDRAULICS AND HYDROLOGY (3). Pr., CE 311, MH 362, 563 or departmental approval. Derivation of basic surface and subsurface flow equations, numerical modeling methods, selected problems.
608. ADVANCED NUMERICAL METHODS IN SUBSURFACE HYDROLOGY I (3). Pr., CE 607 or equivalent. Solution of complex partial differential equations in subsurface hydrology using the finite-difference method. Applications include solutions to nonlinear equations and coupled systems of linear and nonlinear equations.
609. ADVANCED NUMERICAL METHODS IN SUBSURFACE HYDROLOGY II (3). Pr., CE 608. Continuation of CE 608 dealing with solution of the transport equation, coupled nonlinear systems and analysis of convergence and stability of numerical approximations.
610. SUBSURFACE CONTAMINANT TRANSPORT (3). Pr., CE 515 or departmental approval. Introduction to mass transport in porous media, derivation of basic equations of mass transport with reactions, overview of groundwater contamination problems, analytical and numerical models of contaminant transport, parameter identification, applications involving well-head protection and site remediation.
611. SUBSURFACE CONTAMINANT PHYSICS AND CHEMISTRY (3). Pr., CE 515 or departmental approval. Derivation of the advection-dispersion equation for problems involving radioactive decay, adsorption, facilitated transport by colloidal mechanisms, ion exchange, microbial degradation, multiphase flow and contaminant partitioning, as well as detailed study of these mechanisms.
614. ENVIRONMENTAL DISPERSION PROCESSES (3). Pr., CE 511, MH 362, or departmental approval. Introduction to theories of mass transport in air and water; derivation and solutions of basic mass transport equations; turbulent diffusion; shear-flow dispersion; mixing in rivers.
616. HYDRAULIC ANALYSIS OF UNSTEADY FLOW (3). Pr., CE 511, MH 362 or departmental approval. Introduction to transient problems, pipeline transients, open channel transients, analytical and numerical modeling.
620. UNIT OPERATIONS IN WATER AND WASTE TREATMENT I (3). Pr., departmental approval. The theory of various unit operations is developed and the application of these operations to water and wastewater treatment is considered.
621. UNIT PROCESSES IN WATER AND WASTE TREATMENT I (3). Pr., departmental approval. Alkalinity, acidity, corrosion, chemical precipitation and coagulation are discussed.
622. BIOLOGICAL WASTE TREATMENT (5). Pr., departmental approval. Development and application of the theories of biological waste treatment.
623. UNIT PROCESSES IN WATER AND WASTE TREATMENT II (3). Pr., departmental approval. Ion exchange, adsorption, disinfection and gas transfer are discussed.
624. UNIT OPERATIONS IN WATER AND WASTE TREATMENT II (3). Pr., departmental approval. Sedimentation, flotation and centrifugation are discussed.
627. ENVIRONMENTAL ENGINEERING CHEMISTRY III (3). Pr., CE 521 or departmental approval. The chemistry of natural systems including: equilibrium chemistry, buffer systems in natural water, thermodynamics and surface chemistry.
- 627L. ENVIRONMENTAL ENGINEERING CHEMISTRY III LAB (1). Pr., CE 521L or departmental approval. Coreq. CE 627. Continuation of CE 521L. Laboratory testing procedures and experiments related to water and waste treatment. Use of innovative analytical instrumentation.
628. WATER QUALITY MODELING (5). Pr., departmental approval. Physical, chemical, biological and hydrological considerations relating to the degradation and self-purification of streams and estuaries. Water uses and water quality goals, objectives and criteria. Principles of water quality modeling and waste-load allocation. Field studies will be performed.
629. ADVANCED WASTE TREATMENT (3). Pr., departmental approval. Nitrogen and phosphorous removal techniques will be stressed. Other advanced waste treatment topics will be discussed.
631. ADVANCED SOIL MECHANICS (5). LEC. 4, LAB. 3. Pr., CE 431 or equivalent. Shear strength and stress-strain characteristics of saturated and partially saturated soils. Soil behavior during consolidation and one-dimensional consolidation theory. Hydraulic conductivity of fine-grained soils.
634. SOIL STABILITY PROBLEMS (3). Pr., CE 431 or equivalent. Slope stability of natural, cut and constructed slopes: field measurements.

635. SOIL DYNAMICS (4). Pr., CE 431 or equivalent. Wave propagation in soils; soil-structure systems; dynamic soil properties; oscillations; machine foundations.
636. IN SITU TESTING OF SOILS (3). Pr., CE 431. Standard penetration tests, cone penetration tests, pressure meter and vane testing. Procedures and interpretation of results.
637. LANDFILLS (3). Pr., CE 431 or departmental approval. Technical and legal aspects of siting, design, operation and closure of MSW landfills.
640. CONSTRUCTION CONTRACTS (3). Pr., CE 540. Format and content of construction contracts and specifications; legal principles of construction law; review of case histories and court decisions.
641. CONSTRUCTION PLANNING AND CONTROL (3). Pr., CE 542. Advanced concepts of planning, scheduling and resource leveling; project cost accounting; labor productivity and motivation; project management computer systems.
642. ESTIMATING AND BIDDING (3). Pr., CE 542. Preliminary and definitive estimates; cash flow analysis; unbalanced bids, bidding strategies; bidding models.
643. CONSTRUCTION MATERIALS AND FORMING METHODS (3). Construction materials management systems; construction material properties; specifications and testing; material handling and transportation; formwork design and erection.
644. ADVANCED CONSTRUCTION EQUIPMENT AND METHODS. (3). Engineering principles of equipment selection and performance for heavy construction; earthwork and compaction; pile driving; tunneling and blasting; paving; equipment inventory and replacement models.
645. CONSTRUCTION APPLICATIONS OF OPERATIONS RESEARCH (3). Pr., CE 582. Applications of linear programming, dynamic programming and simulation to construction operations and policy decisions.
650. TRAFFIC FLOW THEORY (3). Pr., CE 550 or departmental approval. Basic phenomena underlying traffic stream movement and individual vehicle behavior. Topics include flow parameters and relationships; microscopic and macroscopic flow models; equations of motion and state; continuity; single and multi-regime flow models.
651. TRANSPORTATION ANALYSIS (3). Pr., departmental approval. Advanced operations research methods applied to transportation problems including regression/correlation analysis, queueing theory, simulation and stochastic processes.
652. MASS TRANSPORTATION SYSTEMS (3). Pr., CE 556 or equivalent. Mass transportation technology and characteristics; planning for mass transit; travel demand models; innovative technologies.
653. AIR TRANSPORTATION MODELING AND OPERATIONS (3). Pr., CE 452, 651. The development and analysis of air transportation models for airport demand, forecasting and operations.
654. TRANSPORTATION SAFETY (3). Pr., CE 550 or departmental approval. Transportation safety problems and the engineer's role in developing and administering safety programs. Topics include hazardous location identification; analysis of accident data; development and evaluation of accident countermeasures and safety programs.
656. COMPUTER METHODS FOR TRANSPORTATION PLANNING (3). Pr., CE 556. Structure and operation of computer algorithms applicable to urban transportation planning. Emphasis on software for modeling trip-making and database management.
657. TRANSPORTATION PLANNING MODELS (3). Pr., CE 556. An extension of the basic transportation planning process to include the theory of travel demand modeling and contemporary developments in the field. Topics include aggregate and disaggregate behavioral models.
659. SPECIAL TOPICS IN TRANSPORTATION ENGINEERING. (CREDIT TO BE ARRANGED.) May be taken more than one quarter.
660. ADVANCED STRESS ANALYSIS (3). Pr., CE 360. Response of structures to complex loading and support conditions. Shear center, unsymmetrical bending, curved beams. Beams on elastic foundation. Torsion in structures.
661. SPECIAL TOPICS IN STRUCTURAL DESIGN (3-5). Pr., CE 560, 565. Topics and credit hours may vary; topics for advanced study will be selected.
662. EXPERIMENTAL TECHNIQUES IN STRUCTURAL ANALYSIS (3). LEC. 2, LAB. 3. Basic stress-strain relationships. Techniques and instrumentation for structural testing. Mechanical and electrical strain gages. Brittle lacquer, photogrid and photoelastic methods.
663. NUMERICAL TECHNIQUES IN STRUCTURAL ANALYSIS (3). Pr., CE 567. Numerical methods (finite differences, Runge-Kutta, etc.) of analysis for structural members with variable sections; stability, vibrations, eigenvalue and beam-column problems. Applications.
664. STABILITY OF STRUCTURES I (3). Pr., CE 567. Stability theory and geometric instability of structures, elastic buckling of bars and frames. Beam-columns. Inelastic buckling.
665. ADVANCED MATRIX ANALYSIS OF SKELETAL STRUCTURES (3). Pr. CE 567 or departmental approval. Analysis of 2D and 3D framed structures. Topics include temperature variation, eigensolution and minimum potential energy formulations.
666. FINITE ELEMENT METHODS IN STRUCTURAL MECHANICS I (3). Pr., CE 567 or departmental approval. Principles of finite element analysis. Variational principles. Displacement polynomial and shape function formulations. 1-D and 2-D elements. Computer program development and applications.
667. ADVANCED PRESTRESSED CONCRETE DESIGN. (3). Pr., CE 560 and 562 or departmental approval. Composite construction, principles of concordancy and linear transformation for indeterminate prestressed structures, two-way prestressed concrete floor systems, connections for prestressed concrete elements, torsion design.

668. **FATIGUE AND FRACTURE MECHANICS ANALYSIS** (3). Pr., CE 671 or departmental approval. Types of fracture. Fundamentals of linear elastic fracture mechanics analysis and design. Yield theories. Fatigue design methods and fatigue-fracture analysis methods.
669. **ANALYSIS OF STRUCTURAL PLATE SYSTEMS** (3). Pr., CE 567. Analysis of isotropic and anisotropic plates with various shapes and boundary conditions due to lateral and inplane loads. Large deflection considerations in design. Numerical techniques.
670. **ANALYSIS OF SHELL SYSTEMS** (3). Pr., CE 669. Analysis of isotropic shell systems. Shells of revolution, cylindrical shells. Membrane and bending theories of analysis.
671. **APPLIED ELASTICITY** (3). Pr., CE 567. Analysis of stress and strain. Generalized stress-strain relationships. Application to plane stress and plane strain.
672. **PLASTIC BEHAVIOR OF STRUCTURES** (3). Pr., CE 360. Basic theory of plasticity. Plastic design procedures and code provisions in structural design.
673. **STABILITY OF STRUCTURES II** (3). Pr., CE 664. Torsional buckling and lateral-torsional buckling of beams. Buckling of plates and shells. Buckling of rings and arches.
675. **FINITE ELEMENT METHODS IN STRUCTURAL MECHANICS II** (3). Pr., CE 666. Mixed and hybrid variational principles for finite element methods. Fundamentals of nonlinear solid mechanics. Total and Updated Lagrangian incremental finite element methods for finite deformations and/or nonlinear material behavior.
676. **STRUCTURAL DYNAMICS II** (3). Pr., CE 568. Multiple degree of freedom systems. Analysis of structures subject to blast loadings. Responses of large structures to dynamic loads. Continuous systems.
677. **VARIATIONAL METHODS IN STRUCTURAL MECHANICS** (3). Pr., CE 567. Introduction to the calculus of variations; formulation of various energy functionals; derivation of Euler's equations and boundary conditions; application of various energy principles to beams, plates, shells, elasticity, thermoelasticity and plasticity problems; introduction to the variational approaches to finite element methods.
678. **EARTHQUAKE ENGINEERING** (3). Pr., CE 568. Characteristics of earthquakes; seismicity; design earthquake motion; behavior of materials and structural components under earthquake loading; elastic and inelastic response spectra; soil-structures interaction; earthquake resistant design of structures.
682. **PAVEMENT MATERIALS CHARACTERIZATION** (4). LEC. 3, LAB. 3. Pr., CE 587 or departmental approval. Laboratory and field test methods determining engineering properties of pavement materials, including hot mix asphalt, Portland cement concrete, granular materials and subgrade soils; interpretation of test data for selecting property values; and use of engineering properties in design and analysis of pavement response to environmental and vehicular loads.
684. **PAVEMENT MANAGEMENT SYSTEMS** (3). Pr., CE 587 or departmental approval. Concepts of pavement management, evaluation of pavement performance, serviceability concepts, structural evaluation, safety, maintenance and rehabilitation, economic considerations, selection of alternatives and life cycle analysis.
686. **ADVANCED STRUCTURAL PAVEMENT DESIGN** (3). Pr., CE 682. Material fatigue and permanent deformation characteristics, layered elastic response fatigue and permanent element response models, viscoelastic response models and rational airport and highway pavement design systems.
688. **ASPHALT CONCRETE MIX DESIGN** (4). LEC. 3, LAB. 3. Pr., CE 587 or departmental approval. Properties of asphalt aggregate and aggregate-asphalt mixtures; Marshall mix design procedures; Hveem mix design procedures.
690. **SEMINAR (CREDIT TO BE ARRANGED.)** May be taken more than one quarter.
691. **DIRECTED READING IN CIVIL ENGINEERING (CREDIT TO BE ARRANGED.)** May be taken more than one quarter.
698. **ENGINEERING PROJECT (CREDIT TO BE ARRANGED.)** Intended for students in the MCE program and may be taken more than one quarter. The project in civil engineering may be done on or off campus. Approval of the project and its final written report by the student's supervising professor and committee is required.
699. **RESEARCH AND THESIS (CREDIT TO BE ARRANGED.)** May be taken more than one quarter.
799. **RESEARCH AND DISSERTATION (CREDIT TO BE ARRANGED.)** May be taken more than one quarter.

Communication (COM)

Associate Professors Brown, *Chair*, Brinson, Fitch-Hauser, Plasketes, Villaume and Weaver
Assistant Professors Fillippeli, Flynn, Myrick and Sutton
Adjunct Associate Professor Rotfeld
Adjunct Assistant Professor Felkey
Instructor Brown

GENERAL COMMUNICATION (COM)

100. **PROFESSIONAL COMMUNICATION** (3). Oral communication theory and practice in interviewing, oral reporting, public speaking with emphasis on content, organization, delivery and adaption to the audience.
141. **GROUP PROBLEM SOLVING THROUGH DISCUSSION** (5). Group problem solving through discussion. The values and limitations of discussion, the prerequisites of reaching agreement and a systematic approach to solving problems in group discussion. Leadership in problem solving.
310. **SPEAKING BEFORE AUDIENCES** (5). Composition and delivery of original speeches for Communication majors only.

311. **PERSUASIVE DISCOURSE (5).** Pr., departmental approval. Understanding, practicing and analyzing persuasion. Survey of alternative theoretical approaches to attitude formation and change. Practical experience in organizing and presenting persuasive messages. Developing skills as a critical evaluator of persuasion in natural settings.
320. **FUNDAMENTALS OF ORAL INTERPRETATION OF LITERATURE (5).** Oral readings of prose, poetry and drama, enhancing students' understanding and appreciation of the art of literature by engaging them actively in reading the literary text aloud.
340. **COMMUNICATION IN ORGANIZATIONS (5).** Prevalent communication skills in complex human organizations. Students participate in communication-related activities including interviewing, the development of a consulting prospectus and presentational speaking. Theoretical considerations for each performance area are stressed.
341. **SMALL GROUP COMMUNICATION (5).** Pr., RTF 330, COM 350, 360. Group processes such as decision-making, problem-solving, leadership and conflict management for Communication majors only.
350. **FOUNDATIONS OF HUMAN COMMUNICATION (5).** The nature, purposes and process of communication. Theories examining the use of verbal and nonverbal codes, the influence of context and the effects of messages in a variety of settings.
360. **FOUNDATIONS OF RHETORIC AND SOCIAL INFLUENCE (5).** Examines the impact of discourse in public discussion of social and political issues; traces the development of rhetorical theory from its classical roots to contributions by modern thinkers; relates rhetorical theory and analysis to understanding of the persuasive discourse in our society.
370. **ARGUMENTATIVE DISCOURSE (5).** Debating techniques and procedures; their application to issues of current public interest; the gathering, organization and presentation of facts, proofs, evidence.
375. **DEBATE WORKSHOP (1).** Advanced national debate question for experienced debaters. Analysis of logical, emotional proofs in competitive debate. Lecture and practical work. May be repeated for a maximum of three credit hours.
400. **HONORS THESES (3-6).** Pr., senior standing and enrollment in the Honors Program. Repeatable once for a maximum of six hours credit.
410. **COMMUNICATION STRATEGIES OF SOCIAL MOVEMENTS (5).** Pr., RTF 330, COM 350, 360. Examination of the communication techniques of contemporary social movements to attract members, solidify support and effect social change. Topics include: stages of development of movements; issues, persuasive strategies and stylistic devices of representative groups; and, nature and impact of social movements.
415. **HONORS READINGS AND SPECIAL TOPICS (3-6).** Pr., RTF 330, COM 350, 360, admission to University Honors Program and junior or senior standing. May be repeated to a maximum of six hours. Open only to students in the Honors Program with the consent of the Honors Program Advisor.
422. **READERS THEATER (5).** Pr., RTF 330, COM 350, 360, 320 or departmental approval. Literature appropriate to group performance and treats the techniques of adaptation, compilation, rehearsal and staging of non-dramatic literature.
439. **INTERNSHIP (3 or 6).** Pr., departmental permission and a minimum of 143 hours of course work, freshman and sophomore English, RTF 330, COM 350, 360, 311, 340, at least one 400-level COM course and RTF 338 or 335 or PR 408. Opportunity to apply classroom experience to real job setting. Interns who plan to spend 20-25 hours per week working in the internship should enroll in the three-hour option. Those who plan to work 35-40 hours per week should enroll in the six-hour option. S/U grading only.
441. **THEORIES OF LEADERSHIP (5).** Pr., RTF 330, COM 350, 360. Emphasizes theory and research in leadership as a communication variable and behavioral practice in small group and organizational settings. Students participate in numerous leadership simulations.
450. **PSYCHOLOGY OF COMMUNICATION (5).** Pr., RTF 330, COM 350, 360, one course in psychology. Speech as a psychological phenomenon with consideration of language development, symbolism, verbal learning. Small groups and audience behavior and psychological studies in various areas of communication situations.
451. **SURVEY RESEARCH METHODS IN MASS COMMUNICATION (5).** Pr., RTF 330, COM 350, 360. Theory and practical experience in methods of survey research in mass media and public relations. Sampling techniques, interview strategies, questionnaire development and data analysis.
470. **LEGAL COMMUNICATION (5).** Pr., RTF 330, COM 350, 360. Three communication subjects of significance to the legal profession are treated; the initial lawyer/client interview, legal negotiation and trial practice. The theory and research base of these three topics will be investigated, and practicum exercises will assist student development of needed skills.
480. **INTERPERSONAL COMMUNICATION (5).** Pr., RTF 330, COM 350, 360. An analysis and comparison of several approaches to current problems in interpersonal behavior and relational communication. Contexts of varying person perception; interpersonal attraction; and how person perception is related to behavior.
481. **NONVERBAL COMMUNICATION (5).** Pr., RTF 330, COM 350, 360. Research and theory in several areas of non-verbal communication including kinesics, proxemics, paralinguistics, environment and personal appearance.
490. **SPECIAL TOPICS IN SPEECH COMMUNICATION (1-5).** Pr., RTF 330, COM 350, 360. Examines topics in Speech Communication. May be repeated; only five hours applicable to the major.

ADVANCED UNDERGRADUATE AND GRADUATE

512. **COMPUTER APPLICATIONS TO COMMUNICATION THEORY AND RESEARCH (5).** Applies computer simulation techniques to the process of message construction, diffusion of information, small group interaction and organizational network analyses. Course also utilizes statistical packages in the testing of the communication dependent hypotheses.

RADIO/TELEVISION/FILM (RTF)

171. INTRODUCTION TO BROADCAST MEDIA PRACTICUM (1). Survey course for students interested in working with campus broadcasting organizations. Provides brief overview of the history of electronic media principles and techniques as they relate to all facets of broadcast production. Counts as elective hours only and will be considered as hours over and above any degree requirements for a major or minor in the Department of Communication. S-U grading only.
172. BROADCAST PRACTICUM (1). Provides students with hands-on news experience through active involvement with campus television media. Students enrolled will be required to work with one of the student-produced television shows on campus. Students may receive credit for the course no more than five times. Counts as elective hours only and will be considered as hours over and above any degree requirements for a major or minor in the Department of Communication. S-U grading only.
234. RADIO PRODUCTION TECHNIQUES I (5). Pr., departmental approval. Analysis of the creative efforts and responsibilities in the primary stages of broadcast production. Practice in writing, producing, directing, performing and crewing radio productions and taped material.
235. INTRODUCTION TO FILM STUDIES (5). LEC. 4, LAB. 2. Introduction to film analysis, modes of film practice and critical approaches to the study of cinema.
236. TELEVISION PRODUCTION — DIRECTION I (5). Pr., departmental approval. Individual and group projects in the development and production of programs and formats; an intense study of directing theory and the director's role through presentation of educational and dramatic materials.
237. ELECTRONIC FIELD PRODUCTION (5). Pr., departmental approval. The principles and techniques of video tape production with emphasis on portable and remote equipment. The course includes the production and direction of electronic news gathering projects along with the scripting of various creative field assignments.
322. FEATURE WRITING (5). Pr., JM 221 or JM department approval. Gathering material for the writing of "human interest" and feature articles for newspapers and magazines, with consideration given to the marketing of manuscripts. Precludes credit for JM 322.
330. FOUNDATIONS OF MASS COMMUNICATIONS (5). History and bases of mass communication in the U.S., emphasizing social, cultural, regulatory and economic aspects of the American mass communication system.
335. WRITING FOR RADIO/TELEVISION — FILM (5). Pr., departmental approval. The technique of writing dramatic and non-dramatic material for television, radio and films. Emphasis is on performance. Students may elect to emphasize one area.
338. BROADCAST NEWS WRITING (5). Pr., departmental approval. Writing and editing news and informational materials for television and radio. Students solicit and prepare news from and for local sources.
420. HISTORY OF AMERICAN BROADCASTING (5). Pr., RTF 330, COM 350, 360 or departmental approval. The technological, legal, economic and social evolution of radio and television in America.
421. POPULAR CULTURE AND MASS COMMUNICATION (5). Pr., COM 350, 360, RTF 330. Examines popular culture within a mass media context.
430. RADIO/TELEVISION PROGRAMMING STRATEGIES (5). Pr., RTF 330, COM 350, 360. Introduces principles, processes, theories and strategies of programming for radio and television stations and for cable television systems. An introduction to interpreting broadcast ratings.
431. THE SOCIAL INFLUENCE OF MASS MEDIA (5). Pr., RTF 330, COM 350, 360. Functions and effects of mass communication on contemporary social norms and values. The impact of the media on the level of violence and aggressive behavior; the nature of the political process; and individual attitudes and behavior.
432. BROADCAST MANAGEMENT (5). Pr., RTF 330, COM 350, 360. Investigates principles and practices of managing broadcasting stations and cable operations.
433. MEDIA, LAW AND REGULATION (5). Pr., RTF 330, COM 350, 360. Legal, professional and ethical constraints on the mass media.
434. AUDIENCE RESEARCH (5). Pr., RTF 330, COM 350, 360. Broadcast market and audience research methodologies; application of research to programming and sales; and the broadcast audience ratings companies.
436. HISTORY OF INTERNATIONAL CINEMA (5). LEC. 4, LAB. 2. Pr., RTF 330, 235, COM 350, 360 or departmental approval. History of international cinema, including major national cinemas, film movements, directors and evolution of the film style.
439. INTERNSHIP (3 or 6). Pr., departmental permission and a minimum of 143 hours of course work, freshman and sophomore English, RTF 330, 334 or 336 or 337, 338 or 335 and 433, COM 350, 360. Opportunity to apply classroom experience to real job setting. Interns who plan to spend 20-25 hours per week working in the internship should enroll in the three-hour option. Those who plan to work 35-40 hours per week should enroll in the six-hour option. S/U grading only.
534. RADIO PRODUCTION TECHNIQUES II (5). Pr., COM 234 or departmental approval. Continuation of RTF 234 with further refining of writing, producing, directing, performing and crewing radio productions and audio taped material.
536. TELEVISION PRODUCTION — DIRECTION II (5). Pr., COM 236. Individual and group projects in the creation of program material with emphasis on the writer-producer's role in the industry.
590. SPECIAL TOPICS IN RADIO/TELEVISION/FILM (5). Pr., COM 350, 360, RTF 330 or equivalent and junior and senior standing. Specialized areas in RTF, taught quarterly. May receive credit for the course no more than two times.

COURSES FOR GRADUATE STUDENTS

601. HISTORICAL, DESCRIPTIVE AND CRITICAL APPROACHES TO COMMUNICATION (5). Consideration of the scope and nature of these types of research and their contribution to understanding human communication; discussion of the processes and procedure characteristic of these methodologies.
602. EMPIRICAL APPROACHES TO COMMUNICATION (5). Quantitative research in communication. Emphasis on understanding and doing empirical research.
603. DEVELOPMENT OF RHETORICAL THEORY I (5). Pr., departmental approval. Historical study of the theories of persuasion from ancient to modern times. Special attention to the role of rhetoric in society and changing attitudes toward persuasion.
605. PUBLIC RELATIONS THEORY (5). Explores major areas of concern to the theoretical study of public relations. Includes: applied survey research; public relations with business, government and non profit organizations; propaganda techniques and diffusion of information.
606. SEMINAR: STUDIES IN COMMUNICATION THEORY (5). Contemporary theories and analysis of concepts, models and pertinent research in interpersonal communication. Consideration of selected topics.
607. INDEPENDENT STUDY (1-5). A maximum of five hours credit will be accepted for M.A. degree. Conferences, reading, research and reports in one of the listed areas: A. public address; B. interpretation; C. radio and television; D. group methods.
608. SEMINAR IN PERSUASION AND ATTITUDE CHANGE (5). A critical examination of current theory and research in the area of the persuasive act and its effects. Particular attention will be devoted to current departmental projects as examples of present research.
612. EXPERIMENTAL METHODS IN COMMUNICATION (5). A survey and analysis of experimental and empirical research in organizational and public communication.
613. AMERICAN PUBLIC ADDRESS (5). Criticism of selected speech and speakers, 1750 to 1860, studied against a background of political, social and intellectual issues.
615. RHETORICAL CRITICISM (5). Pr., departmental approval. Methods of analyzing persuasive messages of individuals, groups and movements. Application of these methods to selected works.
617. GENDER COMMUNICATION (5). Explores current research on and theories of gender as a communication variable. Topics include the role of gender in interpersonal, organizational and public communication.
620. DEVELOPMENT AND THEORY OF INTERPRETATION (5). The growth and change of theories regarding oral interpretation.
621. FROM NOVEL TO FILM TO PERFORMANCE (5). Concerns four or five 20th century novels and the films made from them and includes performances from the novel.
623. PROBLEMS IN GROUP PERFORMANCE (5). Special problems of analysis and adaptation of literature for performance by groups.
626. INTERPERSONAL COMMUNICATION THEORY (5). Theory and research in the process and effects of interpersonal communication.
630. STUDIES IN MASS COMMUNICATION (5). Pr., departmental approval. Combined media and their relationship with speech and communication.
632. BROADCAST PROGRAMMING AND CRITICISM (5). Pr., departmental approval. Theory and practice of programming, its problems and concepts, coupled with analysis of the criticism leveled at the process and product.
633. BROADCAST REGULATIONS (5). The social and political control of broadcasting by agencies, groups and organizations through legal, social and economic means.
634. COMPARATIVE MASS MEDIA SYSTEMS (5). Investigates world broadcasting systems, international telecommunication policy and problems associated with broadcast signals that transcend national boundaries.
635. MASS COMMUNICATION THEORY (5). Explores major areas of concern to the theoretical study of mass communication and the social impact of mediated messages.
636. MASS MEDIA AND THE POLITICAL SYSTEM (5). Examination of the role of the mass communication system in the American political system.
637. ROLE AND INFLUENCE OF MASS MEDIA IN SOCIETY (5). Examines the nature of mass media, their function in society and their impact on social processes, public decision and private lives.
639. INTERNSHIP (5). Professional experience in communication area of interest; must include managerial duties.
651. SEMINAR IN INTRAPERSONAL PERSPECTIVES (5). Looks at communication from a receiver orientation focusing on how human beings receive, store and recall information.
672. SEMINAR IN SMALL GROUP COMMUNICATION (5). Principles of human communication as they apply to the small group setting. Processes associated with group decision-making.
673. SEMINAR IN GROUP AND ORGANIZATIONAL COMMUNICATION (5). Group decision-making within an organizational setting. How groups affect change within functioning organizations. Processes associated with the diffusion of innovations.
678. SEMINAR IN ARGUMENTATION AND DEBATE (5). Systems of argumentation as inquiry and advocacy; studies of debate as a decision-making procedure; representative argumentation theorists and leading practitioners.
698. SEMINAR IN SPEECH COMMUNICATION (5). Advanced treatment of contemporary topics, trends, current research findings and opportunities. May be repeated for credit with change in topics.
699. RESEARCH AND THESIS (CREDIT TO BE ARRANGED.)

PUBLIC RELATIONS (PR)

304. INTRODUCTION TO PUBLIC RELATIONS (5). Pr., JM 101. The spectrum of the field of public relations. The various communication skills and technologies necessary for successful public relations will be identified and explored. Credit for this course precludes credit for JM 304.
402. PUBLIC RELATIONS CAMPAIGNS (5). Pr., JM 101, PR 304, RTF 330, COM 350, 360. Investigates selected professional code of ethics and considers appropriate ethical principles for PR practitioners. Emphasis on applying ethical standards to planning campaigns for various target publics.
404. PUBLIC RELATIONS CASE STUDIES (5). Pr., RTF 330, COM 350, 360, JM 101, PR or JM 304 or departmental approval. Investigation and analysis of public relations problems through case studies. Credit for this course precludes credit for JM 404.
408. PUBLIC RELATIONS WRITING AND RESEARCH (5). Pr., RTF 330, COM 350, 360, JM 101, PR 304, COM 451. Methods of gathering and reporting information used in various PR messages. Examines research techniques and instruments used in public relations.
439. INTERNSHIP (3 or 6). Pr., departmental permission and a minimum of 143 hours of course work, freshman and sophomore English, RTF 330, 334 or 336 or 337, 338 or 335, PR 304, 402, 404, 408, COM 350, 360, JM 101, at least one additional journalism course. Opportunity to apply classroom experience to real job setting. Interns who plan to spend 20-25 hours a week working in the internship should enroll in the three-hour option. Those who plan to work 35-40 hours a week should enroll in the six-hour option. S/U grading only.

Communication Disorders (CD)

Professors Fitch, Haynes and Pindzola

Associate Professors Haak and Moran, *Chair*

Assistant Professors Johnson, Krishnamurti and Molt

Clinical Instructors Clark-Lewis, Paxton, Sayers, Stokes and Zylla-Jones

A (**) denotes a GPA of 2.5 is required to enter the course.

A (**) denotes a GPA of 2.2 is required to enter the course.

SPEECH PATHOLOGY

250. COMMUNICATION DISORDERS IN SOCIETY (3). Information on stuttering, speech disorders, language disorders, voice problems and hearing impairment. Students experience what it is like to have these problems and learn how to interact with individuals with communication disorders.
340. THE SPEECH AND HEARING MECHANISM (5). Anatomy and physiology of the speech and hearing mechanism.
341. PHONETICS (4). Principles of phonetics and their application to speech.
350. INTRODUCTION TO SPEECH PATHOLOGY — AUDIOLOGY (5). Survey of the field of speech pathology-audiology. Includes history of the profession, the inter-relatedness of the various pathologies, general principles of evaluation and therapy and the profession itself.
355. SPEECH AND HEARING SCIENCE (4). Pr., CD 340, 341, 2.2 GPA. Introduction to the normal processes of speech, language and hearing including: the physiological aspects of normal human speech communication, the hemispheric processing of language, the acoustical aspects of speech production and transmission, the psychoacoustic aspects of speech reception and the perceptual variables associated with linguistic behavior.
450. COMMUNICATION DISORDERS IN THE CLASSROOM (5). Not open to students emphasizing or majoring in speech-language pathology and audiology. Basic principles underlying a speech-language pathology program in a school setting. Description and discussion of disorders of oral communication, the identification of such disorders, principles of management and the role of the classroom teacher.
470. HONORS READINGS AND SPECIAL TOPICS (3-6). Pr., admission to University Honors Program, junior or senior standing. May be repeated for a maximum of six hours. Open only to students in the University Honors Program with the consent of the Honors Program Advisor.

ADVANCED UNDERGRADUATE

551. ARTICULATION DISORDERS (5). Pr., CD 340, 341 or equivalent**. Principles of normal and deviant articulation acquisition.
552. LANGUAGE ACQUISITION (5). Pr., CD 340, 341 or equivalent**. First language acquisition in childhood and its change throughout the life span.
553. FLUENCY DISORDERS (5). Pr., CD 340, 341 or equivalent**. Principles of fluent and disfluent verbal behavior.
554. VOCAL DISORDERS (5). Pr., CD 340, 341 or equivalent**. Principles of normal and deviant vocal behavior.
556. CHILD AND ADOLESCENT LANGUAGE DISORDERS (4)**. Pr., CD 552 or equivalent. Overview of research dealing with the nature, assessment and treatment of language disorders in child and adolescent populations.
557. EVALUATION OF RESEARCH IN SPEECH PATHOLOGY AND AUDIOLOGY (5). Pr., CD 551 or 552 or 553 or equivalent**. A critical survey of common experimental designs and statistical procedures used in the speech-language pathology/audiology literature. For consumers of research as opposed to researchers.
558. INTRODUCTION TO CLINICAL PROCEDURES IN SPEECH PATHOLOGY (4)**. Pr., two of the following: CD 551, 552, 553, 554 (one of these must be 551 or 552). Orientation to clinical activities, management methods and preparation of professional reports. Clinical observation required.

559. CLINICAL PRACTICUM IN SPEECH-LANGUAGE PATHOLOGY (1). Pr., CD 558 or equivalent*. May be repeated for a maximum of two hours toward minimum degree requirements.
580. THE NEUROLOGICAL BASES OF COMMUNICATIVE DISORDERS (4). Pr., CD 340 and 2.2 g.p.a. Anatomy and physiology of the central nervous system as it relates to speech, language and hearing function and disorders.

AUDIOLOGY

560. INTRODUCTION TO AUDIOLOGY (5)**. Principles of auditory reception and the problems involved in measuring, evaluating and conserving hearing.
562. HEARING REHABILITATION (5). Pr., CD 560 or departmental approval**. Detailed concern for the rehabilitation problems of children and adults in the area of auditory training, speech reading and speech conservation. Clinical practice.
565. INTRODUCTION TO CLINICAL PROCEDURES IN AUDIOLOGY (4). Pr., CD 560 or equivalent*. Audiological instrumentation and test procedures.

COURSES FOR GRADUATE STUDENTS

607. INDEPENDENT STUDY (1-5). A maximum of five hours credit will be accepted for degrees. Conferences, readings, research or reports in a specialized area of communication disorders.
650. CLINICAL PROBLEMS IN SPEECH (2). Pr., CD 558-559 series or departmental approval. May be repeated for credit. Methods, techniques and clinical management of the disorders of speech. Clinical practice required.
651. ARTICULATION DISORDERS (4). Pr., CD 551 or departmental approval. Empirical and theoretical bases for articulatory pathologies, diagnoses and therapies.
652. CLINICAL STRATEGIES IN CHILD AND ADOLESCENT LANGUAGE DISORDERS (4). Pr., CD 552 or departmental approval. Empirical and theoretical bases for evaluation and treatment of child/adolescent language disorders.
653. FLUENCY DISORDERS (4). Pr., CD 553 or departmental approval. Empirical and theoretical bases for dysfluency disorders, diagnoses and therapies.
654. VOICE DISORDERS (4). Pr., CD 554 or departmental approval. Empirical and theoretical bases for voice pathologies, diagnoses and therapies.
655. LANGUAGE AND SPEECH DISORDERS IN ADULTS (4). Pr., CD 552 or departmental approval. Empirical and theoretical bases for speech/language disorders associated with CNS pathologies, diagnoses and therapies.
656. CLEFT PALATE (4). Pr., CD 551 or departmental approval. Empirical and theoretical bases for speech/language pathologies associated with cleft palate, diagnoses and therapies.
657. SEMINAR IN SPEECH PATHOLOGY (CREDIT TO BE ARRANGED.) Pr., CD 551, 552, 553, 554 or departmental approval. May be repeated for credit with change in topics. Advanced treatment of contemporary topics and trends, as well as current research aspects of speech pathology.
658. FIELD EXPERIENCE IN SPEECH PATHOLOGY (5-10). (S-U grading only.) Full-time assignment in a speech and hearing facility, the choice being made from the following settings: University Speech and Hearing Clinic, hospital, public school and various community agencies serving speech and hearing-impaired children and adults. May be repeated for a maximum of 10 hours. No more than 5 hours may be used toward minimum requirements for master's degree.
660. CLINICAL PROBLEMS IN HEARING (2). Pr., CD 565, 560 and 562 or departmental approval. May be repeated for credit.
661. PEDIATRIC AUDIOLOGY (4). Pr., CD 560, 562 or departmental approval. Etiologic factors, screening, audiologic assessment, differential diagnosis and clinical management of infants and children with hearing disorders.
662. AUDIOMETRIC INSTRUMENTATION AND CALIBRATION (4). Pr., CD 560, 562 or departmental approval. Audiometric calibration, instrumentation and physical requirements for audiometry.
663. AUDIOLOGY IN THE MEDICAL SETTING (3). Pr., CD 560, 562 or departmental approval. The medical aspects of audiology and the relationship of audiology to otology and neurotology.
664. AMPLIFICATION ASSESSMENT AND FITTING (4). Pr., CD 560, 562 or departmental approval. Background and development of hearing aids and other amplification systems; performance standards and measurement techniques; selection, fitting, and dispensing procedures.
665. HEARING CONSERVATION AND NOISE MANAGEMENT (4). Pr., CD 560 or departmental approval. Nature, detection and prevention of noise-induced hearing loss; measurement, evaluation and control of environmental noise and hearing conservation techniques.
666. PSYCHOACOUSTICS (3). Pr., CD 560, 562 or departmental approval. Psychoacoustic theories and methods. Auditory perception in normal and hearing-impaired listeners.
667. SEMINAR IN AUDIOLOGY (CREDIT TO BE ARRANGED.) Pr., CD 560, 51, 562 or departmental approval. May be repeated for credit with change in topics. Advanced treatment of contemporary topics and trends, as well as current research aspects of audiology.
668. FIELD EXPERIENCE IN AUDIOLOGY (5-10). (S-U grading only.) Full-time assignment in a speech and hearing facility, the choice being made from the following settings: University Speech and Hearing Clinic, hospital, public school and various community agencies serving speech and hearing impaired children and adults. May be repeated for a maximum of 10 hours. No more than 5 hours may be used toward minimum requirements for master's degree.
669. CENTRAL AUDITORY PROCESSING (4). Pr., CD 560, 562 or departmental approval. Selected clinical procedures in audiology, including acoustic reflex measures and behavioral tests of central auditory function.

670. HEARING LOSS IN THE AGING POPULATION (4). Pr., CD 560, 562 or departmental approval. Psychosocial aspects of hearing loss; clinical and therapeutic management of older persons with hearing disorders including counseling of the hearing-impaired and their families.
672. ELECTROPHYSIOLOGICAL PROCEDURES IN AUDIOLOGY (4). Pr., CD 560, 562 or departmental approval. Selected neurophysiological clinical procedures in audiology, including electronystagmography and auditory evoked potentials.
680. EXPERIMENTAL PHONETICS (4). Pr., CD 341 or equivalent. Orientation to acoustic and physiologic instrumentation used in the study of normal and disordered speech.
681. MOTOR SPEECH DISORDERS (4). Pr., CD 659 or departmental approval. Empirical and theoretical bases for motor speech disorders, diagnoses and therapies.
682. MEDICAL ASPECTS OF SPEECH-LANGUAGE PATHOLOGY (4). Pr., CD 580 or departmental approval. Overview of the role of speech language pathology in medical settings with specific emphasis on the terminology and procedures used to assess and treat dysphagia, dementia, traumatic brain injury and right hemisphere damage in adult population.
684. AUGMENTATIVE AND ALTERNATIVE COMMUNICATION SYSTEMS FOR CHILDREN AND ADULTS (4). A review of the processes and specific equipment involved in assessment, prescription and intervention with adults and children who are unable to use traditional communication modes of speech and/or writing.
690. EDUCATIONAL MANAGEMENT OF HEARING-IMPAIRED (4). Pr., CD 560, 562 or departmental approval. Familiarizes students with the parameters involved in the management of hearing-impaired school-aged children.
699. RESEARCH AND THESIS (CREDIT TO BE ARRANGED.)

Computer Science and Engineering (CSE)

Professor Cross, Chair

Associate Professors Carlisle, Chang, McCreary, Moore and Phillips

Assistant Professors Chapman, Hendrix, Murphy and Narayanan

100. INTRODUCTION TO PERSONAL COMPUTER APPLICATIONS (3). Introduction to personal computers and software application packages including word processing, spreadsheets and data base systems. Lab sessions provide a hands-on environment in which to master the basic skills required for proper utilization of each package. No prior knowledge of computers is assumed.
110. INTERMEDIATE PERSONAL COMPUTING (3). LEC. 2, LAB. 3. Pr., CSE 100 or equivalent.
120. INTRODUCTION TO ENGINEERING COMPUTATION (3). LEC. 2, LAB. 3. Coreq., MH 161. Structured digital computer programming with emphasis on the use of the digital computer as an engineering tool.
200. FUNDAMENTALS OF COMPUTER SCIENCE I (4). LEC. 3, LAB. 3. Coreq., MH 163. Broad introduction to programming methodology. Emphasis is on problem-solving strategies and techniques for developing/documenting computer applications, including principles of structured programming, problem decomposition, program organization, the use of procedural abstraction and basic debugging skills.
204. COMPUTER PROGRAMMING (3). Pr., MH 151 or 161. Digital computer programming with emphasis on mathematical problems, using FORTRAN programming language. (Not open to students with credit in CSE 120.)
220. FUNDAMENTALS OF COMPUTER SCIENCE II (4). LEC. 3, LAB. 3. Pr., CSE 200. Continuation of CSE 200. Pointers and dynamic data structures; linked lists, queues, stacks, trees and graphs.
300. STRUCTURED PROGRAMMING FOR ENGINEERS AND SCIENTISTS (3). Fundamentals of structured programming principles, including top-down program design, program documentation, and advanced problem solving for engineering and scientific applications using a structured programming language. (Not open to students with credit in CSE 200.)
301. WORKSTATION TOOLS FOR ENGINEERING (3). LEC. 2, LAB. 3. Pr., one high-level language programming course. Elementary problem-solving for engineering and scientific applications using a computer workstation environment. Includes an introduction to a structured programming language. A coordinated approach demonstrates the role of workstation tools in improving the quality and efficiency of programming efforts in all engineering disciplines.
324. DISCRETE STRUCTURES (3). Pr., MH 266. Sets, relations, functions, recurrence relations, propositional calculus, predicate calculus, boolean algebra, graph theory, introduction to monoids and formal language theory.
335. MICROCOMPUTER ORGANIZATION AND ASSEMBLY LANGUAGE PROGRAMMING (4). LEC. 3, LAB. 3. Pr., EE 330. Stored program computers, hardware components, software components; data representation and number systems; instruction sets; addressing modes and assembly language programming; memory, memory cycles and memory hierarchy; arithmetic/logic unit; control unit, program counter and instruction cycle; input/output programming and interrupts. (Credit is not allowed for both EE 335 and CSE 335.)
350. SYSTEMS PROGRAMMING WITH C (3). Pr., CSE 220. Extensive treatment of the C programming language and major software development tools in the UNIX environment. Applications to systems programming, including interaction with operating system functions and network programming.
360. FUNDAMENTAL ALGORITHM DESIGN AND ANALYSIS (3). Pr., CSE 220. Algorithm development using pseudo-languages; elementary program structures; classification of algorithms, e.g. recursive, divide-and-conquer, greedy, algebraic simplification and transformation; evaluation of polynomials; iteration; sorting; solving linear equations; basic search methods and backtracking.
400. SYSTEMS PROGRAMMING PRINCIPLES I (3). Pr., CSE 335. Coreq., CSE 360. Review of machine structure, machine language and assembly language; introduction to the design of assemblers, macro processors and loaders; overview of operating systems principles.

- 400L. SYSTEMS PROGRAMMING LABORATORY (1). Coreq., CSE 400. Design and implementation of an assembler, a macro processor or a binder/loader as a comprehensive project.
405. OPERATING SYSTEMS (3). Pr., CSE 350. Structure and functions of operating systems; process state models and scheduling algorithms; memory management; interrupt processing; auxiliary storage management; disk scheduling algorithms and file systems; resource allocation policies and deadlock; protection; concurrent asynchronous processes; design strategies.
- 405L. OPERATING SYSTEMS LABORATORY (1). Coreq., CSE 405. Design and implementation of operating systems components as a comprehensive project.
412. DATABASE SYSTEMS I (3). Pr., CSE 360. An introduction to database systems: basic concepts, storage structures, data models and data sublanguages: relational, hierarchical and network models.
422. INTRODUCTION TO SOFTWARE ENGINEERING (3). LEC. 2, LAB. 3. Coreq., CSE 360. Tools and methodology for the design of complex software systems composed of integrated programs, data files and user interfaces.
432. INTRODUCTION TO COMPUTER NETWORKS (3). Pr., CSE 350 or EE 430. Fundamental concepts of computer networks and communications; the seven-layer OSI model; local and wide area networks; applications and case studies.
490. SPECIAL TOPICS (CREDIT TO BE ARRANGED.) Pr., departmental approval. May be taken more than one quarter.
498. HONORS THESIS (3-6). Pr., departmental approval. Individual student endeavor consisting of directed research and writing of honors thesis. (CSE Honors Program students only. May be repeated once for a maximum of six credit hours.)
499. SPECIAL PROJECTS (CREDIT TO BE ARRANGED.) Pr., departmental approval. May be taken more than one quarter.

ADVANCED UNDERGRADUATE AND GRADUATE COURSES

500. X WINDOW SYSTEM PROGRAMMING (3). Pr., CSE 350 or departmental approval. Introduction to the design of graphical user interfaces based on the X Window System platform. Students design and implement object-oriented interface components using standard widget sets and the X Toolkit intrinsics.
501. ADVANCED SCIENTIFIC COMPUTING (3). LEC. 2, LAB. 3. Pr., senior standing and knowledge of FORTRAN. Design and implementation of scientific and engineering applications using supercomputers. Emphasis is on use of vectorization and loop-level parallelization to speed up large scale numerical computations.
505. OPERATING SYSTEMS DESIGN PRINCIPLES (3). Pr., CSE 405 or EE 430. Design and implementation strategies used in operating systems software to manage system resources; design problems in implementing multiprogramming and dynamic management of memory; design solutions to synchronizing and communicating with processes; managing time; design techniques used to process various classes of interrupts and to schedule processors.
512. DATABASE SYSTEMS II (3). Pr., CSE 412. Database system architecture and design methodology, with emphasis on the relational model. Design and implementation of a comprehensive database system as a coordinated project.
518. PROGRAMMING LANGUAGE CONCEPTS (3). Pr., CSE 360. An evaluation of the major programming language paradigms, with emphasis on how language concepts affect design and implementation decisions. A variety of programming models and their implementation in programming languages are studied in order to illustrate language principles and to allow language comparisons.
520. THEORY OF FORMAL LANGUAGES I (3). Pr., EE 330. A detailed study of mathematical models of regular sets, context-free languages and Turing machines; deterministic and non-deterministic models, closure properties, normal forms, simplifications and applications.
521. COMPILER CONSTRUCTION (3). Pr., CSE 520. Compiler organization; lexical analysis; LL and LR grammars and deterministic parsing; syntax-directed translation; error detection and recovery; compiler generation tools.
- 521L. COMPILER CONSTRUCTION LABORATORY (1). Coreq., CSE 521. Design and implementation of a high-level language compiler as a comprehensive project.
522. SOFTWARE ENGINEERING I (4). LEC. 3, LAB. 3. Pr., CSE 422. Design of reliable software; error causes and consequences; requirements, specifications and objectives related to reliable design; software testing, test case design, test tools, path testing and transaction flows; data validation and syntax charts; programming languages and reliability, proving program correctness and reliability models.
523. ADVANCED PROGRAMMING IN ADA (3). Pr., senior standing or departmental approval. Advanced topics in programming using Ada as an example of a language oriented toward software engineering applications; emphasis is placed on features for data abstraction, information hiding and software component libraries.
525. OBJECT-ORIENTED PROGRAMMING (3). Pr., CSE 350 and senior standing or departmental approval. Introduction to the object-oriented design methodology emphasizing correct problem decomposition and development of appropriate classes and methods; experience in working with object-oriented languages, applications and systems.
526. DESIGN OF SOFTWARE FOR PARALLEL SYSTEMS (3). Pr., CSE 360 and senior standing. Parallel languages; the design and analysis of parallel algorithms; models of parallel computation; sorting; matrix multiplication, numerical and graph algorithms.

527. **ADVANCED DESIGN AND ANALYSIS OF ALGORITHMS** (3). Pr., CSE 360. Algorithm design theory; computational complexity; relationship of data structures to algorithm design; study of design strategies including divide-and-conquer, the greedy method, dynamic programming, basic search and traversal techniques, backtracking, branch-and-bound, algebraic simplification and transformations; lower bound theory; study of NP-hard and NP-complete problems.
530. **DESIGN ISSUES IN COMPUTER ARCHITECTURES** (3). Pr., CSE 405 or EE 430. Formal comparison of computer architectures, emphasizing the interface between hardware and software. Includes functional requirements analysis; memory systems design; pipeline design; instruction set design; and quantitative evaluation of computer performance.
532. **DESIGN AND ANALYSIS OF COMPUTER NETWORKS** (3). Pr., CSE 432 or departmental approval. In-depth treatment of issues in design of computer networks, including tradeoffs and methods for network performance evaluation. (Credit not allowed for both EE 532 and CSE 532.)
533. **PARALLEL PROCESSING** (3). Pr., CSE 405 or EE 430. Hardware and software elements of multiprocessors, multicomputers, pipeline and array machines and data flow architectures; design principles related to machine structures, control software and hardware, data storage and access, programming languages and application algorithms. (Credit not allowed for both EE 533 and CSE 533.)
534. **DISTRIBUTED-MEMORY MULTIPROCESSORS I** (3). Pr., CSE 405 or EE 430 or departmental approval. Architecture, specification methodologies and programming languages for distributed-memory multiprocessor systems.
540. **FUNDAMENTALS OF COMPUTER GRAPHICS SYSTEMS** (3). LEC. 2, LAB. 3. Pr., CSE 220. Hardware and software components of computer graphics systems; display files, two-dimensional and three-dimensional transformations, clipping and windowing, perspective, hidden-line elimination and shading; interactive graphics; survey of applications.
541. **USER INTERFACE DESIGN AND DEVELOPMENT** (3). Pr., CSE 350, 422. Introduction to the design of user interfaces; relationship to human-computer interaction; interface quality and methods of evaluation; dialogue tools and techniques; user-centered design and task analysis; prototyping and implementation tools and environments.
560. **ARTIFICIAL INTELLIGENCE I** (4). LEC. 3, LAB. 3. Pr., CSE 360 or departmental approval. Introduction to machine intelligence; computer vision; search; logic and deduction; abduction, uncertainty and expert systems.
561. **ARTIFICIAL INTELLIGENCE II** (3). Pr., CSE 560. Introduction to natural language understanding, managing plans of action, language comprehension and machine learning.
562. **LOGIC PROGRAMMING** (3). Pr., CSE 324 or departmental approval. Introduction to logic programming through representation, style, data structures, program verification and implementation using Prolog.
- 571-572. **SENIOR DESIGN PROJECT** (3-2). Pr., CSE 422 and senior standing. Development of requirement definitions, architectural design specification, detailed design specification, testing plan and documentation for the software and/or hardware components of a comprehensive project.
590. **SPECIAL TOPICS (CREDIT TO BE ARRANGED.)** Pr., departmental approval. May be taken more than one quarter.
591. **FOUNDATIONS OF COMPUTER SCIENCE I** (5). Pr., admission to the M.C.S.E. degree program. Data structures and algorithms; abstract data types; analysis of time space design considerations; applications and implementations.
592. **FOUNDATIONS OF COMPUTER SCIENCE II** (3). Pr., admission to the M.C.S.E. degree program. Mathematical foundations of computer science; recurrence equations; partially ordered structures; logic; formal machines and computability; engineering applications.
593. **FOUNDATIONS OF COMPUTER SCIENCE III** (5). Pr., admission to the M.C.S.E. degree program and CSE 591. Topics in systems software including assemblers, macro processors, compilers and operating systems.

COURSES FOR GRADUATE STUDENTS

600. **ADVANCED SYSTEMS PROGRAMMING** (3). Pr., CSE 405 or departmental approval. Interrupt handler design principles; data management macros, access methods, data channel programming; operating system generation, operating system modification, patching; operating system macro facilities programming; file structures and management.
605. **MODERN OPERATING SYSTEMS** (3). Pr., CSE 505 or departmental approval. Modern operating systems design principles, multi-processor operating systems, computer systems performance modeling and evaluation, computer system security, survey of current literature on operating systems and architectural support of operating systems.
612. **OBJECT-ORIENTED DATABASE SYSTEMS** (3). Pr., CSE 512 or departmental approval. Concepts of object-oriented design and programming as applied to database systems; algorithmic and computational aspects of object-oriented schema design; Vbase and other existing OODBMS; applications.
613. **AUTODEDUCTIVE AND AUTOLEARNING SYSTEMS** (3). Pr., CSE 560 or departmental approval. Identification, definition and classification of autodeductive and autolearning systems; principles for designing such systems; examples of numeric and alphanumeric autodeductive systems and adaptive autolearning systems.
618. **PROGRAMMING LANGUAGE DESIGN I** (3). Pr., CSE 521 or departmental approval. A language-independent examination of the relationship between programming language design and implementation strategies, with emphasis on semantic and runtime representation issues. Includes data abstraction and encapsulation, exception handling, concurrent execution, dynamic storage management and programming language environments.

619. PROGRAMMING LANGUAGE DESIGN II (3). Pr., CSE 521 or departmental approval. Formal methods for the description of programming languages. Includes standard metalinguistic systems useful in defining concrete and abstract syntax as well as translational or interpretive semantics; attribute grammars; two-level grammars (W-grammars); operational, denotational and axiomatic semantics.
620. THEORY OF FORMAL LANGUAGES II (3). Pr., CSE 520 or departmental approval. Turing machines, recursively enumerable languages and phrase structure grammars; context-sensitive languages and linear bounded automata; deterministic context-free languages and LR grammars; closure properties of families of languages; auxiliary pushdown automata, stack automata, indexed languages.
621. COMPILER THEORY I (3). Pr., CSE 521 or departmental approval. Advanced topics in parsing algorithms, syntax-directed translation, intermediate representation, code generation, flow analysis, optimization and translator writing systems.
622. SOFTWARE ENGINEERING II (3). Pr., CSE 522 or departmental approval. Programming systems and languages; structured software design steps and automated design tools; requirements specification languages; program-to-program interfaces; verification and validation; simulation support tools.
623. COMPUTATIONAL COMPLEXITY (3). Pr., CSE 520 or departmental approval. Turing machines and partial recursive functions; undecidability; hierarchy theorems and relations among complexity measures; nondeterministic hierarchies; NP-complete problems; provably intractable problems.
624. PETRI NETS AND CONCURRENT SYSTEM MODELING (3). Pr., CSE 520 or departmental approval. Theory and application of Petri Nets; modeling and analysis of computer hardware and software; concurrency and conflict; complexity and decidability; Petri Net languages; related models of parallel computation.
625. SOFTWARE ENGINEERING ENVIRONMENTS (3). Pr., CSE 522 or departmental approval. Survey of state-of-the-art software engineering environments for the automated support of requirements analysis and specification, design specification, code generation, testing, maintenance and project management.
630. COMPUTER ARCHITECTURE I (3). Pr., CSE 530 or departmental approval. Structural organization and hardware design of digital computers, hardware description languages, register transfers, micro-operations, control units and timing, instruction set design and microprogramming. Students design and simulate a central processing unit.
632. COMPUTER NETWORKS AND DATA COMMUNICATIONS (3). Pr., CSE 430 or departmental approval. Introduction to computer networks, the OSI layered network model, local and wide-area networks, applications and case studies.
633. THEORY OF CONCURRENT SYSTEMS (3). Pr., CSE 634 or departmental approval. Theoretical approaches to the formal specification of concurrency. Applications to the design of distributed and concurrent computer systems.
634. DISTRIBUTED-MEMORY MULTIPROCESSORS II (3). Pr., CSE 534. Specification and implementation of application programs for distributed-memory multiprocessor systems.
638. MODELING AND PERFORMANCE EVALUATION OF COMPUTER SYSTEMS (3). Pr., CSE 530 or CSE 532. Models and techniques used in performance evaluation of computer systems, including autonomous systems, distributed systems and communication networks; simulation tools.
639. ADVANCED NETWORK PROTOCOL DESIGN (3). Pr., CSE 532 or 632. A comprehensive study of formal methods used in protocol design. Analytic techniques are used to examine logical correctness and performance in protocols before their implementation. Specification are also used to compile major parts of the implementation directly and to test the resultant implementation for conformance to its specification.
640. ADVANCED COMPUTER GRAPHICS (3). Pr., CSE 540 or departmental approval. Advanced 3D topics including visual realism issues, visible-surface determination approaches, illumination and shading algorithms, surface and solid modeling, advanced modeling techniques, animation and advanced raster graphics architecture.
660. KNOWLEDGE ENGINEERING AND EXPERT SYSTEMS (3). Pr., CSE 560 or departmental approval. Basic concepts for the construction of expert systems and related architectures; tools and languages for knowledge engineering analysis and design; case studies of expert systems.
662. DISTRIBUTED ARTIFICIAL INTELLIGENCE (3). Pr., CSE 560 or departmental approval. Overview of current issues, methods and case studies in distributed artificial intelligence including distribution and task allocation; coherence and coordination; and interchange languages, structures and protocols.
665. MACHINE LEARNING (3). Pr., CSE 560 or departmental approval. Overview of current methods and case studies of machine learning, including learning from examples, learning in problem-solving, learning from observation and discovery and learning from instruction.
690. SPECIAL TOPICS (CREDIT TO BE ARRANGED.) Pr., departmental approval. May be taken more than one quarter.
695. CSE SEMINAR (CREDIT TO BE ARRANGED.) Pr., departmental approval. May be taken more than one quarter.
698. M.C.S.E. DESIGN PROJECT (CREDIT TO BE ARRANGED.) Pr., departmental approval. Planning, implementation and completion of design project. Project culminates in both a written report and an oral presentation. May be taken more than one quarter with a limit of 5 hours of credit earned toward a degree. S/U grading.
699. RESEARCH AND THESIS (CREDIT TO BE ARRANGED.) May be taken more than one quarter.
700. ADVANCED TOPICS IN SYSTEMS PROGRAMMING (3). Pr., CSE 405 or departmental approval. Topics in advanced systems programming. Case studies of multi-level support systems such as catalog management systems, special-purpose access method, programming environments and run-time environments.
705. SPECIAL TOPICS IN OPERATING SYSTEMS (3). Pr., CSE 505 or departmental approval. Operating system design principles for multiprocessor and special-purpose architectures; techniques for system performance analysis and evaluation.

712. ADVANCED DATABASE SYSTEMS (3). Pr., CSE 512 or departmental approval. Advanced topics involving literature and laboratory research in relational, hierarchical, network and/or object-oriented database models with emphasis upon distributed data systems.
713. ADVANCED AUTODEDUCTIVE AND AUTOLEARNING SYSTEMS (3). Pr., CSE 613 or departmental approval. Designs for selected autodeductive, adaptive autolearning and combination systems that do not mimic human thought.
714. ADVANCED DOCUMENT ANALYSIS AND CLASSIFICATION SYSTEMS (3). Pr., CSE 614 or departmental approval. Statistical and semantic methods of content analysis and classification; applications of neural networks for content analysis of documents; combination (statistical, semantic and neural networks) methods; the HEARSAY system.
718. ADVANCED TOPICS IN PROGRAMMING LANGUAGE DESIGN (3). Pr., CSE 618 or departmental approval. Topics in programming language design and implementation, selected from such areas as standards definition and enforcement, formal specification models for non-procedural languages and language support for specialized activities such as object-oriented programming, pattern matching, simulation, or robotics.
721. COMPILER THEORY II (3). Pr., CSE 521 or departmental approval. Advanced topics in compiler theory, with emphasis on non-syntactic aspects of compiler design.
722. ADVANCED SOFTWARE ENGINEERING (3). Pr., CSE 522 or departmental approval. Advanced concepts in design languages; principles of abstraction in the design of large computer systems; simulation; automatic code generation; comprehensive software engineering environments.
725. ADVANCED SOFTWARE ENGINEERING ENVIRONMENTS (3). Pr., CSE 522 or departmental approval. Topics in software engineering environments, including a survey of experimental systems for automated support of requirements analysis and specification, design specification, code generation, testing, maintenance and project management.
730. COMPUTER ARCHITECTURE II (3). Pr., CSE 530 or departmental approval. Computer architecture and design principles; computer structures; partitioning; pipelining; vector processing; multi-processing; case studies.
731. ADVANCED TOPICS IN COMPUTER ARCHITECTURE (3). Pr., CSE 530 or departmental approval. Topics in the field of computer architecture, with emphasis varying according to current research interests. May be taken more than one quarter.
732. DESIGN AND ANALYSIS OF COMPUTER NETWORKS (3). Pr., CSE 532 or departmental approval. Layered communication architectures, SNA and X.25 protocol. Performance evaluation of communication networks and systems using queueing theory. Design and analysis of packet switching and circuit switching networks. Principles of integrated services digital networks.
733. THEORY OF CONCURRENT SYSTEMS (3). Pr., CSE 533 or departmental approval. The theory of concurrent computer architectures and research in multiple processor computing environments.
734. ADVANCED TOPICS IN PARALLEL COMPUTATION (3). Pr., CSE 633 or 634. Current topics in parallel architectures, algorithms and software methodologies.
735. FAULT TOLERANT COMPUTING (4). Pr., CSE 530 or departmental approval. Architecture and design of fault tolerant computer systems using protective redundancy, estimation of the reliability and availability of fault tolerant systems, error recovery and fault diagnosis.
760. SPECIAL TOPICS IN KNOWLEDGE-BASED SYSTEM (3). Pr., CSE 560 or departmental approval. Methodologies for knowledge acquisition and representation, inference, conflict resolution and explanation; study and comparison of knowledge-based system development tools.
790. SPECIAL TOPICS (CREDIT TO BE ARRANGED.) Pr., departmental approval. May be taken more than one quarter.
799. RESEARCH AND DISSERTATION (CREDIT TO BE ARRANGED.) May be taken more than one quarter.

Consumer Affairs (CA)

Professors Warfield, *Head*, Forsythe, McCord and Solomon

Associate Professors Anderson, Barry, Brannon, Cavender and Slaten

Assistant Professors Aycock, Centrallo, Clem, Kim, Potter, Presley and Ulrich

Instructor Bunn

100. ORIENTATION TO INTERIOR ENVIRONMENTS (1). Introduction to key elements in the field of interior environments. Overview of the academic program of study.
115. THE TEXTILE INDUSTRIAL COMPLEX (5). Introduction to the composition, characteristics and products of the textile industrial complex. Includes fiber procedures, textile manufacturers, dyers, finishers, apparel manufacturers and retailers.
116. ART FOR LIVING (3). A working knowledge of basic concepts in the organization and evaluation of design with emphasis on the contribution of design and color as enrichment of individual and family environment.
120. TECHNICAL DRAWING AND DESIGN (3). LEC. 1, STUDIO 6. Pr., CA 100. Drawing techniques and conventions employed in technical presentations of designs of interior spaces.
121. SPATIAL ANALYSIS (3). LEC. 1, STUDIO 6. Pr., CA 100 and 116. Principles and elements of three-dimensional design, with particular application to three-dimensional spatial design.
140. APPAREL PRODUCT DEVELOPMENT I (4). LEC. 2, LAB. 6. Pr., CA 115. Introduction to the apparel design and pattern making concepts incorporating manual and computer-aided design technology.

205. SOCIAL PSYCHOLOGY OF CLOTHING (3). Pr., CA 115 or equivalent. Aesthetic, functional and technological factors as they interact to determine the meaning and use of clothing and textiles in culture.
206. CUSTOM APPAREL PRODUCTION (3). LEC. 2, LAB. 4. Custom apparel production techniques and fabric analysis for the production of better-priced, couture apparel and production samples. A grade of C or higher is required to advance to CA 505.
215. SURVEY OF THE DECORATIVE ARTS (5). Pr., AT 171 or 172 or 173 and CA 100. A survey of the development of furniture styles within a cultural and historical framework.
216. ART FOR LIVING II (3-5). (3) LEC. 2, LAB. 2. (5) LEC. 2, LAB. 6. Pr., CA 116. Continuation of the individual's artistic environment with emphasis on the application of principles of design and color to specific problems of everyday life.
217. CONSUMERS AND MATERIAL CULTURE (3). Cultural influences on consumers' experiences with products used to express social identity.
221. RESIDENTIAL SPACE PLANNING (4). LEC. 2, STUDIO 6. Pr., CA 100, 120, 121. Analysis and development of residential space design. Survey of residential building materials, systems and operations. Introduction to design communication using two-dimensional drawings, schedules and specifications.
222. FURNISHINGS FOR INTERIORS (4). Pr., CA 100, 116. Introduction to the functional and aesthetic aspects of furnishing interior spaces. Overview of decorative and functional materials and components, with emphasis on surface treatments. Introduction to estimation of materials.
223. RESIDENTIAL INTERIORS I (4). LEC. 3, STUDIO 3. Pr., CA 100, 120, 121, 221, 222, 224. Coreq., CA 215. Analysis and development of residential interior spaces. Application of principles of color and design. Emphasis on textiles, window treatments, furniture and accessories. Organization of design presentation.
224. FUNDAMENTALS OF VISUAL PRESENTATION (3). STUDIO 9. Pr., CA 100, 120, 121, 221. Basic skills, materials and techniques employed in the visual and verbal presentation of interior furnishings designs.
226. APPAREL DESIGN (3). STUDIO 9. Pr., CA 115, 116. Principles of apparel line development, structure and production incorporated into the design of apparel within the fashion and cultural context. Principles of computer-aided design are integrated.
240. APPAREL PRODUCTION MANAGEMENT I (4). LEC. 2, LAB. 6. Pr., CA 115 and 140 for CA majors, TT 101 and 102 for TE majors. Introduction to the apparel industry methods, technology and terminology.
255. TEXTILES FOR INTERIORS (3). Pr., CA 115 or departmental approval. Fibers, yarns, fabrics and finishes of textile products with emphasis in their application to interiors. Credit will not be allowed for both CA 305 and CA 255.
305. TEXTILES (5). Pr., CA 115 and CH 104 & 104L or BI 105 & 106 or BI 105 & 107. Organic compounds, polymers, fibers and chemical finishes in their relationship to apparel and household textiles. Credit will not be allowed for both CA 305 and CA 255.
315. SURVEY OF THE DECORATIVE ARTS II (3). Pr., CA 215. Historical and cultural survey of the minor decorative arts; glass, ceramics, porcelains, metals and textiles.
316. FASHION ANALYSIS (3). Pr., CA 116. The dynamic nature of fashion and the interacting forces which shape fashion trends in apparel.
324. NON-RESIDENTIAL INTERIORS I (4). LEC. 2, STUDIO 6. Pr., CA 100, 120, 121, 221, 222, 224. Analysis and development of non-residential design. Exploration and application of techniques of project presentation.
325. MERCHANDISE PLANNING AND CONTROL (5). Pr., CA 115, MT 331, AC 211. Application of principles of merchandise management and retail buying to the retailing of consumer goods and services.
330. PROFESSIONAL PLANNING AND DEVELOPMENT (1). LAB. 2. Pr., junior standing or departmental approval. Professional development course highlighting personal goals and related career opportunities.
333. LIGHTING DESIGN (5). LEC. 3, STUDIO 6. Pr., CA 100, 120, 121, 215, 221, 222, 223, 224, 324. Application of functional and aesthetic concepts and techniques of lighting design. Evaluation of materials and controls, energy utilization, aesthetic quality. Lighting design layouts and specifications.
334. INTRODUCTION TO APPAREL, TEXTILES AND MERCHANDISING INTERNSHIP (1). LAB. 2. Pr., CA 330. Prepares students for maximum utilization of supervised professional internship in apparel, textiles or retailing.
336. ORIENTATION TO INTERNSHIP IN INTERIOR ENVIRONMENTS (1). Pr., CA 100, 120, 121, 215, 221, 222, 223, 224, 255, 324 and approval of internship application by INE faculty. Preparatory course for INE internship.
338. STUDY ABROAD OPPORTUNITIES IN HUMAN SCIENCES (1). Introduction to the international scope of Human Sciences by examining language, climate, economics, food, clothing, shelter and family life in selected cultures of interest; an exploration of study abroad opportunities in pursuit of an International Minor in Human Sciences.
340. APPAREL PRODUCTION MANAGEMENT II (5). LEC. 2, LAB. 6. Pr., CA 240. Coreq., CA 305. For AMDP majors. Planning and problem-solving throughout the apparel production process, including methods engineering, time-study and costing. Open to junior/senior level non-majors from the colleges of Business and Engineering.
344. CODES AND ACCESSIBILITY (3). Accessibility needs of the physically handicapped in residential and non-residential environments. Examination of life safety codes and their effects on both environments.
353. BUSINESS PRACTICES IN INTERIOR ENVIRONMENTS (5). Pr., CA 100, 120, 121, 215, 221, 222, 223, 224. Analysis of current developments in the interior furnishings business market. Professional practices within the business setting. Overview of furnishings merchandising, including purchasing, promotion and salesmanship. Estimation of interior decorative materials.
363. ENVIRONMENTAL SYSTEMS/ENERGY MANAGEMENT (3). LEC. 3. Pr., CA 100, 120, 121, 215, 221, 222, 223, 324. Equipment and systems for interior environmental control.
399. EXPERIENTIAL LEARNING (1-6). Pr., sophomore standing and departmental approval.

422. KITCHEN AND BATH PLANNING (5). LEC. 3, STUDIO 6. Pr., CA 100, 120, 121, 215, 221, 222, 223, 224, 255, 324, 333, 344, 353. Aesthetic and technical elements of kitchen and bath design.
423. RESIDENTIAL INTERIORS II (4). LEC. 1, STUDIO 9. Pr., CA 100, 120, 121, 215, 221, 222, 223, 315, 324, 333, 344, 353, 363, 422. Creative development of residential interiors for specific clients focusing on the interrelationships of multiple interior spaces. Strategies used in planning furnishings as a component in the housing market. Introduction to the design team approach.
424. NON-RESIDENTIAL INTERIORS II (4). LEC. 2, STUDIO 6. Pr., CA 100, 120, 121, 215, 222, 223, 255, 324, 333, 344, 353. Coreq., CA 363. Analysis and development of non-residential interior spaces and application of human behavioral elements in the design process. CA 363 must be taken concurrently or prior to CA 424.
431. GLOBAL ENVIRONMENTAL ISSUES (3). Pr., senior standing. Relationship of higher education and the citizen to global issues that are environmental.
436. INTERNSHIP IN INTERIOR ENVIRONMENTS (12). Pr., senior standing; approval of internship application by INE faculty. Supervised professional internship in interior environments.
470. HONORS READINGS AND SPECIAL TOPICS (3-6). Pr., membership in University Honors Program; junior or senior standing. May be repeated for a maximum of six hours. Open only to students in the Honors Program with the consent of the Honors Program Advisor.
471. HONORS THESIS (5). Pr., membership in University Honors Program; senior standing, CA 470. Thesis in student's area of interest. Includes library research, field work, data analysis, scientific writing and/or other tasks related to advanced independent research. Open only to students in the Honors Program with consent of the Honors Program Advisor.
478. VISUAL MERCHANDISING (3). LEC. 2, LAB. 2. Pr., junior standing, CA 116 or equivalent, MT 331 or departmental approval. Exploration of history, equipment, application and theory of display techniques. Emphasis is on displays in windows and interior store settings.
490. INDEPENDENT OR FIELD STUDY (1-8). An individual problems course involving directed readings and/or laboratory or field experiences under the direction of a faculty member on some problem of mutual interest. Field experiences may include work with families, business or industry.

ADVANCED UNDERGRADUATE AND GRADUATE

505. ADVANCED PATTERNMAKING (3). STUDIO 9. Pr., CA 140, 206 or equivalent with a grade of C or higher. Design and production of garments utilizing advanced drafting, draping and flat pattern techniques.
511. APPAREL DESIGN FOR SPECIAL NEEDS (2). Pr., CA 115, SOC 201, PG 201 and junior standing. Physical, psychological and social facets of selecting, adapting and designing apparel for special needs of people.
- 511L. APPAREL DESIGN FOR SPECIAL NEEDS LABORATORY (2). LAB (4). Pr., CA 395 and junior standing. Coreq. CA 511. Concepts learned in CA 511 are applied to laboratory problems.
515. HISTORY OF TEXTILES (5). Pr., HY 101, 102, 103; or HY 121, 122, 123; or U 270, 271, 272; or equivalent. Development of the textile industry and of fabric design from the earliest times to the present day.
516. APPAREL QUALITY ANALYSIS (3). Pr., CA 240, 305. Analysis of quality variations of soft goods and study of factors affecting quality of materials, manufacturing processes, markets and resources. Quality will be examined as a management tool for the textile apparel and retail complex.
521. WORLD PRODUCTION AND TRADE OF TEXTILES AND APPAREL (5). Pr., CA 305. The role of fiber, textile and apparel industries in the international economy and the international trade agreements that govern them.
522. FASHION MERCHANDISING AND RETAIL MANAGEMENT (3). Pr., CA 325, MN 310. Application of retail management to the retailing of consumer goods and services.
523. ENTREPRENEURSHIP IN PRODUCT DEVELOPMENT AND RETAILING (5). Analysis of consumer, product and market segments for business opportunities in textiles, apparel, beauty, interiors and retailing.
524. THEORIES OF FASHION CHANGE (3). Pr., CA 115, 205. Survey of the theories explaining fashion change, diffusion and adoption in textiles, apparel, beauty, interiors and retailing.
525. HISTORY OF COSTUME (5). Pr., HY 101, 102, 103; or HY 121, 122, 123; or U 270, 271, 272; or equivalent. Evolution of Western costume from prehistoric time to present day.
535. TEXTILE TESTING (5). LEC. 2, LAB 6. Pr., CA 305 or equivalent. Standard testing procedures and equipment used in determining the physical and chemical characteristics of fibers, yarns and fabrics and of the statistical methods employed in data evaluation.
538. STUDY/TRAVEL IN CONSUMER AFFAIRS (2-8). May be repeated for a maximum of 12 undergraduate credits or eight graduate credits. Pr., Human Sciences core and departmental approval. Concentrated study in CA in U.S. or foreign locations which offer unique resources for investigation in one of these content areas. Lectures presented at prearranged points. Papers required on selected phases.
540. APPAREL PRODUCT DEVELOPMENT II (5). LEC. 1, LAB. 8. Pr., CA 325 or 340 and 516 and 535. Integration of design, production and marketing of apparel utilizing a team approach and emphasizing decision-making skills.
555. SENIOR DESIGN STUDIO (2). STUDIO 6. Pr., CA 206 or equivalent, 340, 505. Execution of original garments utilizing advanced design, patternmaking and production techniques.
560. TEXTILE FINISHES (4). Pr., CA 305 or equivalent, junior standing. Chemistry and mechanics involved in finishing textile materials. Properties of finished fabrics related to end use.
- 560L. TEXTILE FINISHES LABORATORY (1). LAB. 3. Coreq. CA 560. Techniques of textile finishing. Analysis and evaluation of finishes.

Counseling and Counseling Psychology

580. PROBLEMS IN DESIGN. A. APPAREL; B. TEXTILE DESIGN; C. VISUAL MERCHANDISING; D. INTERIOR ENVIRONMENTS (3-5). LEC. 1, LAB. 9-12. Pr., for A, CA 555 or equivalent; for B, C and D, foundation courses in the field, departmental approval. Creative work integrating methods, materials and processes in solution of specified design problems. May be repeated and combined for a maximum of 10 hours.
581. INTERNSHIP IN APPAREL, TEXTILES AND MERCHANDISING (12). Pr., CA 334 and 540, 325 or 555 and approval of internship supervisor. Supervised professional experience with a domestic or global firm in apparel design, apparel production management or fashion merchandising.

COURSES FOR GRADUATE STUDENTS

601. SEMINAR (1-5). (A). CLOTHING; (B). TEXTILES; (C). DESIGN; (D). HOUSING; (E). GENERAL. May be taken more than one quarter in residence for a maximum of 10 hours.
605. METHODS OF RESEARCH IN HUMAN SCIENCES (3). Pr., satisfactory course in statistics with credit. Research and investigation methods applicable to the various areas of Human Sciences. Required of all graduate students in Consumer Affairs.
609. SPECIAL PROBLEMS: (A). CLOTHING; (B). APPAREL DESIGN; (C). TEXTILES; (D). TEXTILE DESIGN; (E). HOUSING; (F). HISTORIC COSTUME AND/OR TEXTILES (2-5). Pr., departmental approval. May be repeated and combined for a maximum of 15 hours.
610. ADVANCED DESIGN STUDIO (3-5). (A). APPAREL DESIGN; (B). TEXTILE DESIGN; (C). APPAREL AND TEXTILE DESIGN; (D). HISTORIC COSTUME AND/OR TEXTILES. LEC. 1, LAB 5-9. Pr., Foundation courses in the field, departmental approval. Advanced program for synthesizing study and creative work in student's field. May be repeated and combined for a maximum of 15 hours.
615. GRADUATE INTERNSHIP (5). Pr., departmental approval. Supervised professional experience in the textile, apparel or retail industry. May be repeated with a different company for a maximum of 10 hours.
652. READINGS IN TEXTILES, APPAREL AND RETAILING (5). A critical examination of the current literature in the fields of textiles, apparel and retailing.
653. ECONOMICS OF APPAREL AND TEXTILES (5). Pr., EC 200, CA 205 or equivalent and departmental approval. Examination of literature on economics of apparel and textiles. Modern trends in manufacture, distribution and consumption are studied, along with government regulations, labor laws and international implications.
658. CHEMICAL AND PHYSICAL ANALYSIS OF TEXTILES (5). LEC. 3, LAB. 4. Pr., CH 207. The theory and application of chemical and physical analytical methods to textiles.
659. FIBER FORMING POLYMERS (5). Pr., CH 203 or CH 207. The dependence of fiber properties on the chemical formula, the molecular arrangement and the morphology of polymers. The influence of chemical and physical treatments on polymers and ultimate fiber properties.
667. CLOTHING AND BEHAVIOR (4). Pr., SOC 201, PG 211 or U 101, 103 or departmental approval. Clothing as a factor in the physical, social and psychological environment of people and their response to and use of clothing as an aspect of individual behavior and culture.
669. CONSUMER PREFERENCE FOR FASHION PRODUCTS (4). Pr., SOC 201, PG 211 or U 101, 103 or departmental approval. Formation of consumer preferences as related to buyer behavior. Effects on product development, marketing and merchandising of fashion products.
699. RESEARCH AND THESIS (CREDIT TO BE ARRANGED.) Required of all students under the thesis option in any field.

Counseling and Counseling Psychology (CCP)

Professors Stadler, *Head*, and Buckhalt and Byrd

Associate Professors Cobia, Kunkel and Pipes

Assistant Professors Brazelton, Carney, Liddle, Luzzo and Middleton

101. CAREER EXPLORATION AND PLANNING (2). Helps undeclared freshmen in planning careers.
223. HUMAN RELATIONS TRAINING FOR THE HEALTH PROFESSIONS (2). Human relations skills for health care providers; study and practice of the communication process with individuals and in small groups. Limited to students in the health professions.
321. LEADERSHIP IN STUDENT DEVELOPMENT (3). Pr., sophomore standing and departmental approval. For students interested in increasing their understanding and skills in group dynamics and leadership. Attention is paid to application of course content and activities to current co-curricular programs in which students are involved.
322. HUMAN RELATIONS TRAINING IN TEACHER EDUCATION (2). Students are trained in facilitative communication skills which would lead to (1) a deeper understanding of students and the learning process; (2) a more positive working relationship with peers; (3) more efficient methods of classroom management and conflict resolution; and (4) more effective use of support personnel in the school system.

ADVANCED UNDERGRADUATE AND GRADUATE

521. COUNSELING AND HUMAN SERVICES (4). Counseling concepts and skills appropriate in the helping professions. Not open to graduate students in Counselor Education.
522. INTRODUCTION TO COUNSELING THE EXCEPTIONAL INDIVIDUAL (4). Pr., CCP 322. Development of interpersonal relationship skills for persons interested in working with the disabled-physical, mental, social or mental retardation. Emphasis on unique aspects of these skills to the handicapped.

523. MEDICAL ASPECTS OF DISABILITY (3). Pr., departmental approval. Orientation to medical aspects of the disabled individual. Understanding and working cooperatively with medical personnel effectively in the rehabilitation process.
524. COMMUNITY RESOURCES IN REHABILITATION (3). Utilization of community resources in furthering the rehabilitation of the disabled individual; the vocational rehabilitation worker as a referral source; and the utilization of those in the community in a coordinated approach to total rehabilitation of the individual.
525. ADJUSTMENT ASPECTS OF DISABILITY (3). Psychological and social variables associated with adjustment to disability.

COURSES FOR GRADUATE STUDENTS

610. REHABILITATION PROGRAMS, PROFESSIONS AND SERVICES (4). Pr., graduate standing and departmental approval. History, parameters, career opportunities and issues in vocational rehabilitation and roles of various professionals. (Same as RSE 610.)
621. INTRODUCTION TO COUNSELING AND THE COUNSELING PROFESSION (4). Enables students to develop a conceptual framework for viewing the interrelationship of guidance and counseling in terms of personal and social factors and their place in a comprehensive program of student personnel work.
625. INTERNSHIP (1-15). Supervised, on-the-job experiences in a school, college, or other appropriate setting. These experiences will be accompanied by regularly scheduled, on-campus discussion periods providing positive evaluation and analysis of the intern experience.
628. COUNSELING THEORY AND PRACTICE I (4). Pr. or coreq., CCP 601, 610, 621, or 640. Prepares the student for further study of the theoretical and practical aspects of counseling.
630. GROUP DYNAMICS IN COUNSELING (4). Pr., CCP 621. Contemporary theories and analysis of concepts, models and pertinent research in group dynamics as it pertains to counseling.
631. GROUP PROCEDURES IN COUNSELING (4). Pr., CCP 621, 628. History, philosophy and principles of group counseling and guidance. Pertinent research and dynamics of group interaction in counseling settings.
632. PROGRAM PLANNING, MANAGEMENT AND EVALUATION FOR SCHOOL COUNSELORS (4). Pr. CCP 621. Planning, implementation and evaluation of comprehensive developmental programs of school counselors. Such programs meet the developmental, preventative and remedial needs of students K-12.
634. COUNSELING IN THE ELEMENTARY SCHOOL (4). Pr., CCP 621. Counseling and related activities are considered in the scope of pupil personnel activities as a developmental process in the elementary school.
635. PLACEMENT SERVICES IN REHABILITATION COUNSELING (3). Processes and procedures in placement of persons who have a disability, including job modification, development and analysis with special attention to persons with severe disabilities.
637. CAREER DEVELOPMENT AND VOCATIONAL APPRAISAL (4). LEC. 3, LAB. 2. Pr., FED 610 or CCP 659. Overview of career development theories and their implication for appraisal of vocationally related interests, aptitudes and personal characteristics. Laboratory practice in test administration, scoring and interpretation.
638. INFORMATION SERVICES IN COUNSELING (4). Pr. or coreq., CCP 621. Educational and occupational information services and their relationship to counseling.
640. PROFESSIONAL ISSUES IN SCHOOL PSYCHOLOGY (4). Pr., admission to school psychology program or departmental approval. Professional roles and standards; ethical and legal concerns; current issues affecting professional practices.
642. COMMUNITY COUNSELING AND CONSULTATION (4). Pr., CCP 628. History, structure and function of community-based human service agencies with emphasis on preventive, educational and consultation models.
646. DIRECTED INDEPENDENT STUDY (1-6). Special study in which the student's learning efforts are guided toward desired objectives. Includes evaluation by professor and student at regular intervals.
650. SEMINAR IN AREA OF SPECIALIZATION (3-10). Pr., departmental approval. May be repeated for credit not to exceed 10 hours. Provides opportunity for advanced graduate students and professors to pursue cooperatively selected concepts and theoretical formulations.
651. COUNSELING DIVERSE POPULATIONS (4). Discussion of the impact of diversity and multi-culturalism on the counseling process. Includes developing an understanding of the special needs of these populations, counseling strategies and the impact of clinical bias.
653. COUNSELING PROGRAMS IN HIGHER EDUCATION (4). Pr., CCP 621. Integration of counseling functions within the total student personnel program in higher education, legal and ethical aspects of counseling and student personnel work and communication problems between groups within the institution and community.
654. THEORIES OF COLLEGE STUDENT DEVELOPMENT (4). Developmental characteristics of college students, student culture and environment, student movements, research concerning the diversity of college student populations and implications for counseling and student personnel programs.
655. ADULT DEVELOPMENT AND COUNSELING (4). Pr., CCP 628. Theories of normal adult development with emphasis on the integration and practical application of the theories in counseling.
656. RESEARCH AND EVALUATION IN COUNSELING (4). Pr., FED 661. Measurement, appraisal and evaluation of a broad range of objectives in counseling and guidance. Emphasis on criteria, techniques and research procedures necessary to evaluate counselor programs.
658. ASSESSMENT OF CHILDREN AND ADOLESCENTS (4). Applies general principles of assessment to children and adolescents. Emphasizes school-oriented evaluation procedures, including interviewing, observation and description of behavioral, cognitive and social-emotional functioning.
659. ASSESSMENT OF ADULTS (4). Emphasizes knowledge, understanding and skill necessary to obtain records and appraise information about the adult client as an individual and as a member of the group.

Criminal Justice

660. INTELLECTUAL ASSESSMENT OF CHILDREN (5). LEC. 3, LAB. 8. Pr., FED 610. Theory and measurement of children's intelligence. Administration and interpretation of selected tests.
661. INTELLECTUAL ASSESSMENT OF ADULTS (5). LEC. 3, LAB. 8. Pr., FED 610. Theory and measurement of adult intelligence. Administration and interpretation of selected tests.
694. INTRODUCTION TO COUNSELING PRACTICE (2). Pr., CCP 621 or departmental approval. A pre-practicum experience builds counseling skills essential to enter practicum.
695. PRACTICUM (1-5). Pr., CCP 628, 694. Supervised counseling experiences in which students serve as counselors at pre-arranged sites appropriate to their program emphasis. Students must notify practicum coordinator one quarter in advance of registering for CCP 695.
699. RESEARCH AND THESIS (CREDIT TO BE ARRANGED.) May be taken more than one quarter.
701. ETHICAL, LEGAL AND PROFESSIONAL ISSUES IN COUNSELING PSYCHOLOGY I (2). The historical and current forces, persons and organizations influencing the profession of counseling psychology. Includes introduction to ethical and legal principles which guide the behavior of psychologists in general and counseling psychologists in particular.
702. ETHICAL, LEGAL AND PROFESSIONAL ISSUES IN COUNSELING PSYCHOLOGY II (3). Advanced study of the ethical and legal principles which guide the behavior of psychologists in general and counseling psychologists in particular.
725. INTERNSHIP (1-12). Pr., CCP 795, 796. Supervised, on-the-job experiences in a school, college or other appropriate setting for doctoral-level students.
729. ADVANCED COUNSELING THEORY: COGNITIVE/BEHAVIORAL THEORIES (4). Pr., CCP 628. Intensive study of cognitive/behavioral theories, their application to the counseling process and their research base.
739. ADVANCED COUNSELING THEORY: EXISTENTIAL/HUMANISTIC THEORIES (4). Pr., CCP 628. Intensive study of existential/humanistic theories, their application to the counseling process and research base.
749. ADVANCED COUNSELING THEORY: PSYCHODYNAMIC/INTERPERSONAL THEORIES (4). Pr., CCP 628. Intensive study of psychodynamic/interpersonal theories, their application to the counseling process and their research base.
750. ADVANCED SEMINAR (1-5). Pr., departmental approval. May be repeated for credit not to exceed 10 hours. Provides for doctoral-level students to pursue specific topics and theoretical formulations.
753. PROFESSIONAL ISSUES IN COUNSELOR EDUCATION (2). Forum for the exploration of current professional issues in counselor education and supervision, the nature and strength of counter positions for each and the type of evidence/support available in the literature concerning issues under consideration.
754. LEGAL AND ETHICAL ISSUES IN COUNSELING (2). Pr., CCP 753. Provides advanced graduate students a forum for the exploration of ethical standards and practices and legal concerns faced by counselors, supervisors and counselor educators.
795. DOCTORAL PRACTICUM (4). Pr., completion of all master's level practicum requirements. Students serve as counselors at pre-arranged sites appropriate to their program emphasis. Requires the integration of theoretical, clinical and technical expertise in counseling. Students are expected to demonstrate advanced counseling and conceptualization skills.
796. PRACTICUM IN SUPERVISION (4). Pr., completion of 12 hours of practicum. Provides advanced doctoral students extensive experience in both individual and group supervision.
797. ADVANCED DOCTORAL PRACTICUM IN COUNSELING PSYCHOLOGY (2). Pr., CCP 695. Advanced experiences relating theory and practice in counseling psychology.
798. FIELD PROJECT (CREDIT TO BE ARRANGED.) May be taken more than one quarter.
799. RESEARCH AND DISSERTATION (CREDIT TO BE ARRANGED.) May be taken more than one quarter.

Criminal Justice (CJ)

(Department of Political Science)

Assistant Professors Robinson and Kelly

Adjunct Assistant Professor Abbett

Visiting Instructor Houston

260. SURVEY OF CRIMINAL JUSTICE (5). Pr., sophomore standing. Introduction to the philosophical and historical backgrounds; agencies and processes; purposes and functions; administration and technical problems; career orientation. (Same as PO 260.)
261. CRIMINAL EVIDENCE (3). Pr., C/J/PO 260. Comprehensive analysis of the rules of evidence with particular emphasis on evidence obtained through search, seizure and arrest.
262. CRIMINAL INVESTIGATION (5). Pr., C/J/PO 260, sophomore standing. Criminal investigation procedures, including theory of investigation, case preparation, specific techniques for selected offenses, questioning of suspects and witnesses, modus operandi and problems in criminal investigation.
335. CRIMINAL LAW FOR POLICE OFFICERS (3). Pr., C/J/PO 260. Statutory criminal law and criminal court procedures as applicable to the law enforcement function. Considers the impact of statutory law and common law on police policy and process.
336. CRIMINAL JUSTICE (3). Pr., sophomore standing. An in depth examination of the various procedural due process rights of the Constitution as they relate to the criminal processes — historical development, modern interpretations and further trends.

451. CRIMINAL JUSTICE READING COURSE. (MAXIMUM OF 5 CREDITS). Pr., CJ/PO 260, departmental approval. Readings in criminal justice specialization by agreement of student and instructor.
464. INTERNSHIP (5-10). Pr., CJ/PO 260 plus 10 additional CJ hours. Internship is with an approved law enforcement, prosecutive, corrections or youth services agency under joint supervision of the agency and the CJ internship advisor. Written reports, conferences and a final seminar on the internship are required.

ADVANCED UNDERGRADUATE AND GRADUATE

504. AMERICAN CONSTITUTIONAL LAW IV (5). Supreme Court opinions defining due process in national and state administration of criminal justice and juvenile justice.
506. FAMILY LAW (5). Overview of civil and criminal justice issues in family law. Focus on legal principles and their implementation in the contemporary context through utilization of the case study method. Same as PO 506.
512. COMPARATIVE CRIMINAL JUSTICE SYSTEMS (5). Pr., CJ/PO 260. Institutional comparison, social control problems and policies and functional analysis of the criminal justice systems of selected countries. Same as PO 512.
561. SEMINAR IN CRIMINAL JUSTICE PROBLEMS (5). Pr., CJ/PO 260 plus 10 additional CJ hours. Treatment and analysis of selected issues and policies concerning the criminal justice system.
565. CRIMINAL JUSTICE ORGANIZATION AND ADMINISTRATION (5). Pr., CJ/PO 260 and junior standing. Principles of organization and administration applied to criminal justice system; description of U.S. criminal justice system; explanation of system in terms of organization and theory and behavior.

Curriculum and Teaching (CT)

Professors Weaver, Head, Easterday, Ley, Rowsey, Silvern and Taylor
Associate Professors Ash, Baird, N. Barry, Melvin and Villaume
Assistant Professors S. Barry, Boyd, Edgington, Grobecker, Hayn, Kamen, Murray,
Saye and Senger

Areas of Specialization: Early Childhood Education, Elementary Education, English Education, Language Arts Education, Foreign Language Education, Mathematics Education, Music Education, Reading Education, Science Education, Social Science Education.

COURSES FOR GRADUATE STUDENTS

601. LOGO AND CURRICULUM (4). Pr., graduate level curriculum course or departmental approval. Conceptual constructs of the Logo programming language as they apply to the development and implementation of primary, elementary and secondary curriculum.

EARLY CHILDHOOD EDUCATION (CTC)

102. ORIENTATION (1). Helps new students and transfers from other curricula to understand teacher education and teaching as a profession.
301. THE CHILD'S CONSTRUCTION OF SOCIAL COGNITION (3). Examination of constructivist theory and research related to the development of social cognition and pro-social behavior.
302. THE CHILD'S CONSTRUCTION OF NUMBER (3). Examination of constructivist theory and research related to the development of mathematical and physical knowledge.
303. THE CHILD'S CONSTRUCTION OF THE SYMBOLIC FUNCTION (4). Examination of constructivist theory and research related to the development of symbolic function and representational forms.
315. LANGUAGE DEVELOPMENT: IMPLICATIONS FOR THE CHILDHOOD EDUCATOR (4). Applications of language development theories to teaching children. Emphasis on effects theories have on curriculum and teaching.
320. A WORKING THEORY FOR THE CONSTRUCTIVIST EDUCATOR (3). Pr., FED 300 or equivalent, admission to Teacher Education. For pre-service teachers preparing to teach at the pre-school and primary school levels. Students build knowledge of constructivist theory.
321. THE NATURE OF THE LEARNER IN EARLY CHILDHOOD CLASSROOMS (3). Pr., CTC 320. For pre-service teachers preparing to teach at the pre-school and primary school levels. Students build knowledge of how young children interact with the realms of knowledge evident in the early childhood classroom environment.
355. SURVEY OF EARLY CHILDHOOD EDUCATION (3). Survey of the teaching profession, the nature of programmatic variation at the early childhood level.
420. THE CONSTRUCTIVIST TEACHER: STRATEGIES AND TECHNIQUES (3). Pr., CTC 321. Coreq., CTC 495. For pre-service teachers preparing to teach at the pre-school, kindergarten and/or primary school levels. Students build a working knowledge of established constructivist curriculum strategies and techniques, as well as a set of guidelines on which to base wise curriculum decision-making.
421. THE CONSTRUCTIVIST TEACHER: GROWING PROFESSIONALLY (3). Pr., CTC 321. Coreq., CTC 495. For pre-service teachers preparing to teach at the pre-school, kindergarten and/or primary school levels. Students build a working knowledge of the roles and responsibilities of an early childhood teacher.
425. PROFESSIONAL INTERNSHIP (15). Pr., senior standing, admission to Teacher Education prior to Internship, appropriate professional courses. Provides supervised, on-the-job experiences in a school, college or other appropriate setting. These experiences will be accompanied by regularly scheduled discussion periods to provide positive evaluation and analysis of the intern experience.

- 446. DIRECTED INDEPENDENT STUDY (1-10). The student's learning efforts are guided toward desired objectives. Includes evaluation by professor and student at regular intervals.
- 450. SPECIAL TOPICS (1-5). Students and professors pursue cooperatively selected concepts and theoretical formulations, normally in small groups.
- 488. READINGS FOR HONORS (1-10). Individual readings program for students in the Honors Program. Open only to students in the Honors Program with the consent of the Honors advisor.
- 489. HONORS THESIS (3-6). Pr., senior standing in the Honors Program. May be repeated for a maximum of six hours credit. The student thesis is finalized in this course. Open only to students in the Honors Program with the consent of the Honors advisor.
- 495. PRACTICUM (1-10). Provides experiences relating theory and practice, usually carried on simultaneously.

COURSES FOR GRADUATE STUDENTS

- 620. EARLY CHILDHOOD EDUCATION PERSPECTIVE (4-5). Development of early childhood education as an area in non-school and school settings.
- 621. ANALYSIS OF EARLY CHILDHOOD EDUCATION PROGRAMS (4-5). Pr., CTC 620. Analysis of model programs with distinctive philosophies, theoretical frameworks; goals, materials and practices.
- 624. RESEARCH IN EARLY CHILDHOOD EDUCATION (4-5). Pr., CTC 621. Review, analysis and interpretation of research in areas of early childhood education.
- 625. INTERNSHIP (5-15). Supervised on-the-job experiences in a school, college or other appropriate setting, accompanied by regularly scheduled, on-campus discussion periods provide positive evaluation and analysis of this experience.
- 626. PLAY AND EARLY CHILDHOOD EDUCATION (4). Examination of children's play from a constructivist theoretical perspective and translation of theory into early childhood educational practice.
- 627. CHILDREN'S NATURAL DEVELOPMENTAL LEARNING (4). Examination of how children learn from a constructivist theoretical perspective and translation of theory into early childhood educational practice.
- 628. THEMATIC CURRICULUM IN EARLY CHILDHOOD EDUCATION (4). Examination of alternatives in the organization of curriculum for young children based on recent research and constructivist theory.
- 646. DIRECTED INDEPENDENT STUDY (1-6). Special study in which the student's learning efforts are guided toward desired objectives, including evaluation by professor and student at regular intervals.
- 650. SEMINAR IN EARLY CHILDHOOD EDUCATION (3-10). May be repeated for credit not to exceed 10 hours.
- 651. RESEARCH STUDIES IN EARLY CHILDHOOD EDUCATION (4-5). Review, analysis and interpretation of available research with emphasis on designing new research to meet the changing needs of the school.
- 652. CURRICULUM AND TEACHING IN EARLY CHILDHOOD EDUCATION (4-5). Teaching practices and reappraisal of selected experiences and content for curriculum improvement.
- 653. ORGANIZATION OF PROGRAMS IN EARLY CHILDHOOD EDUCATION (4-5). Program organization and development of basic and supplementary materials for guiding teachers and school systems in the continuous improvement of curriculum and teaching practices.
- 654. EVALUATION OF PROGRAMS IN EARLY CHILDHOOD EDUCATION (4-5). Evaluation and investigation of teaching effectiveness with attention also given to the utilization of human and material resources and the coordination of areas of specialization.

Prerequisites for CTC 651, 653 and 654 are 18 hours of appropriate subject matter and 36 hours of psychology and professional education.

- 672. DESIGNING EARLY CHILDHOOD EDUCATION CURRICULA (4-5). Pr., CTC 621, CTC 652 and one additional departmental curriculum and teaching course. Application of early childhood history, philosophy and program analysis to the design of early childhood curriculum.
- 695. PRACTICUM (1-15). Provides advanced students with experiences closely relating theory and practice, usually carried on simultaneously.
- 699. RESEARCH AND THESIS. (CREDIT TO BE ARRANGED.) May be taken more than one quarter.
- 725. INTERNSHIP (3-15). Supervised on-the-job experience in a school, college, or other appropriate setting. These experiences, accompanied by regularly scheduled on-campus discussion periods, provide evaluation and analysis of the intern experience.
- 746. DIRECTED INDEPENDENT STUDY (1-6). Special study in which the student's learning efforts are guided toward desired objectives. Evaluation by professor and student at regular intervals.
- 750. SEMINAR (3-10). May be repeated for credit not to exceed 10 hours.
- 795. PRACTICUM (1-15). Provides doctoral students with experiences closely relating theory and practice, usually carried on simultaneously.
- 798. FIELD PROJECT (CREDIT TO BE ARRANGED.) May be taken more than one quarter.
- 799. RESEARCH AND DISSERTATION (CREDIT TO BE ARRANGED.) May be taken more than one quarter.

ELEMENTARY EDUCATION (CTE)

Programs in Elementary Education lead to certification in grades 1-6. Endorsements for Middle School certification, grades 4-8, in certain specific teaching fields are also available.

- 102. ORIENTATION (1). Helps new students and transfers from other curricula to understand teacher education and teaching as a profession.

302. CURRICULUM I, LANGUAGE ARTS (5). LEC. 3, LAB. 4. Pr., admission to Teacher Education, junior standing.
303. CURRICULUM I, SOCIAL SCIENCE (5). LEC. 3, LAB. 4. Pr., admission to Teacher Education, junior standing.
402. CURRICULUM II, MATHEMATICS (5). LEC. 3, LAB. 4. Pr., admission to Teacher Education, junior standing.
403. CURRICULUM II, NATURAL SCIENCE (5). LEC. 3, LAB. 4. Pr., admission to Teacher Education, junior standing.
425. PROFESSIONAL INTERNSHIP (15). Pr., senior standing, admission to Teacher Education prior to Internship, appropriate professional courses. Provides supervised, on-the-job experiences in a school, college or other appropriate setting. These experiences will be accompanied by regularly scheduled discussion periods to provide positive evaluation and analysis of the intern experience.
446. DIRECTED INDEPENDENT STUDY (1-10). The student's learning efforts are guided toward desired objectives. Includes evaluation by professor and student at regular intervals.
450. SPECIAL TOPICS (1-5). Seniors and professors pursue cooperatively selected concepts and theoretical formulations.
451. ANALYSIS OF ELEMENTARY INSTRUCTIONAL STRATEGIES (3). LEC. 4, LAB. 2. Pr., professional Internship. Patterns of elementary curriculum and organization for instruction, including the analysis of previous and current laboratory experiences in education. Attention given to implementation of systems approach in student's area of specialization.
488. READINGS FOR HONORS (1-10). Individual readings program for students in the Honors Program. Open only to students in the Honors Program with the consent of the Honors advisor.
489. HONORS THESIS (3-6). Pr., senior standing in the Honors Program. May be repeated for a maximum of six hours credit. The student thesis is finalized in this course. Open only to students in the Honors Program with the consent of the Honors advisor.
495. PRACTICUM (1-10). Provides experiences relating theory and practice, usually carried on simultaneously.

COURSES FOR GRADUATE STUDENTS

600. FIRST AND SECOND LANGUAGE ACQUISITION OF THE BILINGUAL CHILD (4-5). Language acquisition theories; second language learning; characteristics of the speaker's native language; and psychological and linguistic differences between English and the native language. Review, use and analysis of language assessment instruments in bilingual education.
601. APPROACHES TO TEACHING IN ELEMENTARY SCHOOLS (4). Organizational patterns, planning and approaches to instruction in the elementary school.
625. INTERNSHIP (5-15). Provides advanced students with supervised, on-the-job experience in a school, college or other appropriate setting. These experiences will be accompanied by regularly scheduled, on-campus discussion periods provide positive evaluation and analysis of the intern experience.
646. DIRECTED INDEPENDENT STUDY (1-6). Special study in which the student's learning efforts are guided toward desired objectives. Evaluation by professor and student of work accomplished at regular intervals.
649. THE ELEMENTARY SCHOOL PROGRAM (4-5). Major curriculum areas and teaching practices in the modern elementary school. Implications of research and theory for the total elementary school program.
650. SEMINAR IN AREAS OF SPECIALIZATION (3-10). May be repeated for credit not to exceed 10 hours. Provides an opportunity for advanced graduate students and professors to pursue cooperatively selected concepts and theoretical formulations.

Each of the courses, 651, 652, 653 and 654 may be taken in the following Areas of the Specialization: (B) Elementary Education, (G) Language Arts, (H) Mathematics, (K) Science, (L) Social Science and (S) Bilingual Education.

651. RESEARCH STUDIES IN EDUCATION IN AREAS OF SPECIALIZATION (4-5). Review, analysis and interpretation of available research with emphasis on designing research to meet the changing needs of the school.
652. CURRICULUM AND TEACHING IN AREAS OF SPECIALIZATION (4-5). Teaching practices and reappraisal of selecting experiences and content for curriculum improvement.
653. ORGANIZATION OF PROGRAM IN AREAS OF SPECIALIZATION (4-5). Program, organization and development of basic and supplementary materials for guiding teachers, faculties and school systems in the continuous improvement of curriculum and teaching practices.
654. EVALUATION OF PROGRAM IN AREAS OF SPECIALIZATION (4-5). Evaluation and investigation of teaching effectiveness with attention also given to the utilization of human and material resources and the coordination of areas of specialization.

Prerequisites for the 651, 652, 653 and 654 courses are 18 hours of appropriate subject matter and 36 hours of psychology and professional education.

657. INDIVIDUALIZED INSTRUCTION IN ELEMENTARY SCHOOLS (4-5). Analysis of programs for individualizing instruction. Emphasis will be on design, implementation and management.
695. PRACTICUM (1-15). Provides advanced students with experiences closely relating theory and practice, usually carried on simultaneously.
699. RESEARCH AND THESIS (CREDIT TO BE ARRANGED.) May be taken more than one quarter.
725. INTERNSHIP (3-15). Supervised on-the-job experience in a school, college, or other appropriate setting. These experiences, accompanied by regularly scheduled on-campus discussion periods, provide evaluation and analysis of the intern experience.
746. DIRECTED INDEPENDENT STUDY (1-6). Special study in which the student's learning efforts are guided toward desired objectives. Includes evaluation by professor and student at regular intervals.

- 750. SEMINAR (3-10). May be repeated for credit not to exceed 10 hours.
- 795. PRACTICUM (1-15). Provides doctoral students with experiences closely relating theory and practice, usually carried on simultaneously.
- 798. FIELD PROJECT (CREDIT TO BE ARRANGED.) May be taken more than one quarter.
- 799. RESEARCH AND DISSERTATION (CREDIT TO BE ARRANGED.) May be taken more than one quarter.

ENGLISH LANGUAGE ARTS EDUCATION

(See Secondary Education [CTS] and Middle School Education [CTD]).

FOREIGN LANGUAGE EDUCATION

(See Secondary Education [CTS]).

MATHEMATICS EDUCATION

(See Secondary Education [CTS] and Middle School Education [CTD]).

MIDDLE SCHOOL EDUCATION (CTD)

- 401. TEACHING MATHEMATICS: MIDDLE SCHOOL (4). LEC. 3, LAB. 2. Pr., FED 300 and departmental approval. Specific teaching strategies for a comprehensive middle school mathematics program.
- 419. THE MIDDLE SCHOOL (5). LEC. 4, LAB. 3. Pr., FED 300, admission to Teacher Education, junior standing. Historical perspective and rationale for the development of the middle school program. Analysis of middle school organization and selected programs. Laboratory experiences are required.
- 425. PROFESSIONAL INTERNSHIP (15). Pr., senior standing, admission to Teacher Education prior to Internship, appropriate professional courses. Supervised teaching in a school, accompanied by scheduled discussions to analyze and evaluate the intern's experience.
- 446. DIRECTED INDEPENDENT STUDY (1-10). Planned individual inquiry, including evaluation by professor and student at regular intervals.
- 450. SPECIAL TOPICS (1-5). Cooperative pursuit of selected concepts and theories, normally in small groups.
- 495. PRACTICUM (1-10). Experiences allow individual students to relate theory and practice.

MUSIC EDUCATION (CTM)

Students majoring in music education must demonstrate functional keyboard skills appropriate to their chosen area of concentration. The keyboard proficiency examination is taken prior to enrollment in any CTM course. Additional degree requirements are available from the Dean of Education.

- 102. ORIENTATION (1). Helps students to understand teacher education and teaching as a profession as well as become acquainted with the preparation program in music education.
- 304. MUSIC AND RELATED ARTS (3-5). Pr., MU 371 or equivalent. Musical, rhythmic and artistic activity program in the context of laboratory experiences with children.
- 394. TEACHING ELEMENTARY INSTRUMENTAL MUSIC (3). LEC. 2, LAB. 2. Pr., four hours of class instruments. Methodology, materials and organization for beginning instrumental music programs; includes laboratory experiences with children.
- 396. EARLY CHILDHOOD AND ELEMENTARY MUSIC PROGRAMS (3). LEC. 2, LAB. 2. Pr., CTM 304 or departmental approval. Methodology, materials and activities for music programs in grades N-6; includes laboratory experiences with children.
- 425. PROFESSIONAL INTERNSHIP (15). Pr., senior standing, admission to Teacher Education prior to Internship, appropriate professional courses. Provides supervised, on-the-job experiences in school, college or other appropriate setting. These experiences will be accompanied by regularly scheduled discussion periods to provide positive evaluation and analysis of the intern experience.
- 446. DIRECTED INDEPENDENT STUDY (1-10). Planned individual inquiry including evaluation by professor and student at regular intervals.
- 450. SPECIAL TOPICS IN MUSIC EDUCATION (1-5). Cooperative pursuit of selected concepts and theories. May be repeated not to exceed six hours.
- 488. READINGS FOR HONORS (1-10). Individual readings program for students in the Honors Program. Open only to students in the Honors Program with the consent of the Honors advisor.
- 489. HONORS THESIS (3-5). Pr., senior standing in the Honors Program. May be repeated for a maximum of six hours credit. The student thesis is finalized in this course. Open only to students in the Honors Program with the consent of the Honors advisor.
- 495. PRACTICUM (1-10). Experiences allow individual students to relate theory to practice.

ADVANCED UNDERGRADUATE AND GRADUATE

- 594. SECONDARY MUSIC METHODS I (3). Pr., admission to Teacher Education. Methodology, materials and activities for secondary music programs. Includes field experiences in public schools.
- 595. SECONDARY MUSIC METHODS II (3). Pr., CTM 594 and admission to Teacher Education. Administrative procedures, program organization and evaluation of secondary music programs. Includes field experiences in public schools.

596. CURRENT TRENDS IN EARLY CHILDHOOD AND ELEMENTARY MUSIC (4). Pr., CTM 396 or departmental approval. Advanced study and evaluation of skills, techniques, materials, theories and trends in music teaching.
597. MATERIALS AND ORGANIZATION OF GENERAL MUSIC PROGRAMS (4). Pr., CTM 396 or departmental approval. Scope and sequence of school general music programs with emphasis on materials and methodologies for post-elementary programs.
611. KODALY CONCEPT IN AMERICAN MUSIC EDUCATION (4-5). Pr., CTM 596 or departmental approval. Theory underlying the Kodaly concept of music education and implications for adaptation to American schools and music literature, with applications to a classroom situation through laboratory experiences.
625. INTERNSHIP (5-15). Provides advanced students with supervised, on-the-job experiences in a school, college or other appropriate setting. These experiences will be accompanied by regularly scheduled on-campus discussion periods provide positive evaluation and analysis of the intern experience.
646. DIRECTED INDEPENDENT STUDY (1-6). Special study in which the student's learning efforts are guided toward desired objectives. Includes evaluation by professor and student at regular intervals.
650. SEMINAR IN MUSIC EDUCATION (3-10). May be repeated for credit not to exceed 10 hours. Provides an opportunity for advanced graduate students and professors to pursue cooperatively selected concepts and theoretical formulations.
651. RESEARCH STUDIES IN MUSIC EDUCATION (4-5). Review, analysis and interpretation of available research with emphasis on designing new research to meet the changing needs of the school.
652. CURRICULUM AND TEACHING IN MUSIC EDUCATION (4-5). Teaching practices and reappraisal of selecting experiences and content for curriculum improvements.
653. ORGANIZATION OF PROGRAM IN MUSIC EDUCATION (4-5). Program, organization and development of basic and supplementary materials for guiding teachers, faculties and school systems in the continuous improvement of curriculum and teaching practices.
654. EVALUATION OF PROGRAM IN MUSIC EDUCATION (4-5). Evaluation and investigation of teaching effectiveness with attention also given to the utilization of human and material resources and the coordination of areas of specialization.

Prerequisites for the 651, 652, 653 and 654 courses are 18 hours of appropriate subject matter and 36 hours of psychology and professional education.

695. PRACTICUM (1-15). Provides advanced students with experiences closely relating theory and practice, usually carried on simultaneously.
699. RESEARCH AND THESIS (CREDIT TO BE ARRANGED.) May be taken more than one quarter.
725. INTERNSHIP (3-15). Supervised on-the-job experience in a school, college or other appropriate setting. These experiences, accompanied by regularly scheduled on-campus discussion periods, provide evaluation and analysis of the intern experience.
746. DIRECTED INDEPENDENT STUDY (1-6). Special study in which the student's learning efforts are guided toward desired objectives. Includes evaluation by professor and student at regular intervals.
750. SEMINAR (3-10). May be repeated for credit not to exceed 10 hours.
795. PRACTICUM (1-15). Provides doctoral students with experiences closely relating theory and practice, usually carried on simultaneously.
798. FIELD PROJECT (CREDIT TO BE ARRANGED.) May be taken more than one quarter.
799. RESEARCH AND DISSERTATION (CREDIT TO BE ARRANGED.) May be taken more than one quarter.

READING EDUCATION (CTR)

201. COLLEGE READING AND STUDY SKILLS (3). LEC. 2, LAB. 2. General elective. Comprehension skills for college students, including classroom performance skills, reading efficiency techniques, vocabulary development and study skills. Students will utilize own content area textbooks.
370. FUNDAMENTALS OF LITERACY INSTRUCTION I (5). LEC. 3, LAB. 4. Pr., FED 300 and junior standing. Theoretical foundations of literacy development of children and teaching strategies that will nurture and enhance literate behavior. Laboratory experiences with children.
371. FUNDAMENTALS OF LITERACY INSTRUCTION II (5). LEC. 3, LAB. 4. Pr., CTR 370 and admission to Teacher Education. Procedures for organizing, teaching and managing a balanced classroom literacy program and for assessing and evaluating the literate activity of children. Laboratory experiences with children.
446. DIRECTED INDEPENDENT STUDY (1-10). Planned individual inquiry, including evaluation by professor and student at regular intervals.
450. SPECIAL TOPICS (1-5). Seniors and professors pursue cooperatively selected concepts and theoretical formulations, normally in small groups.

ADVANCED UNDERGRADUATE AND GRADUATE

570. READING IN THE CONTENT AREAS OF THE ELEMENTARY SCHOOL (5). LEC. 3, LAB. 4. Pr., CTR 370 and junior standing. Develops competencies in teaching functional reading in the elementary school. Directed reading activities, specialized skills and study skills stressed.
571. READING IN THE CONTENT AREAS OF THE SECONDARY SCHOOL (5). Pr., admission to Teacher Education. Reading problems in content areas of the secondary school and special methods of helping students overcome these problems.

576. THE READING OF ADOLESCENTS (5). Pr., CTR 571 or departmental approval. Use of adolescent and popular adult literature in the secondary school reading program. Motivation of the reluctant reader; criteria for evaluating reading materials; and self-selection/self-pacing reading programs in the English or reading classroom.

COURSES FOR GRADUATE STUDENTS

625. INTERNSHIP (3-15). Supervised on-the-job experience in a school, college or other appropriate setting. These experiences, accompanied by regularly scheduled on-campus discussion periods, provide evaluation and analysis of the intern experience.
630. THE READING PROCESS (4-5). Pr., FED 617 or equivalent. Prominent theories concerning mature reading behavior as reflected in current instructional practices.
640. DIAGNOSTIC AND CORRECTIVE TEACHING OF READING (4-5). Need for diagnostic and corrective procedures in the classroom. Procedures in conducting a diagnosis, including interpretation of results. Nature and causes of reading disability and corrective and remedial procedures, including materials, are examined. Opportunities for diagnosis and corrective/remedial teaching.
641. DIAGNOSTIC PROCEDURES IN READING (4-5). Pr., CTR 661 or departmental approval. Administration, scoring and interpretation of specific reading tests, both diagnostic and achievement, to determine causes of reading disabilities. Formal and informal evaluation procedures for regular and remedial classrooms. Screening tests for contributing factors to reading disability. Analysis of test information and the implications for correction of reading difficulties.
642. REMEDIAL PROCEDURES IN READING (4-5). LEC. 3, LAB. 4. Pr., CTR 641 or departmental approval. Individual and group techniques for correcting deficiencies and practice in continuing evaluation of reading difficulties. Practice in using special reading equipment and materials with children having reading problems.
646. DIRECTED INDEPENDENT STUDY (1-6). Special study in which the student's learning efforts are guided toward desired objectives. Includes evaluation by professor and student at regular intervals.
650. SEMINAR IN READING EDUCATION (3-10). May be repeated for credit not to exceed 10 hours. Provides an opportunity for advanced graduate students and professors to pursue cooperatively selected concepts and theoretical formulations.
651. RESEARCH STUDIES IN READING EDUCATION (4-5). Review, analysis and interpretation of available research with emphasis on designing new research to meet the changing needs of the school.
652. CURRICULUM AND TEACHING IN READING (4-5). Teaching practices and reappraisal of selecting experiences and content for curriculum improvement.
653. ORGANIZATION OF PROGRAM IN READING (4-5). Program, organization and development of basic and supplementary materials for guiding teachers, faculties and school systems in the continuous improvement of curriculum and teaching practices.
654. EVALUATION OF PROGRAM IN READING (4-5). Evaluation and investigation of teaching effectiveness with attention also given to the utilization of human and material resources and the coordination of areas of specialization.
656. DIRECTED INDIVIDUAL STUDY IN READING DIAGNOSIS AND READING REMEDIATION (5). Pr., CTR 640 or 642 or departmental approval. Clinical experiences in diagnosing problems in reading and related areas. Also clinical experiences in the remediation of reading problems.
661. CURRENT THEORY, PRACTICE AND TECHNOLOGY IN READING INSTRUCTION (4). Pr., CTR 652 or departmental approval. Current theory, practices and the impact of technology upon classroom management; cognitive, affective and psychomotor development as related to reading.
674. PROBLEMS IN IMPROVEMENT OF READING AT THE ELEMENTARY SCHOOL LEVEL (1-5). Pr., teaching experience or departmental approval. An examination of problem areas of effective reading instruction in grades one through eight. Emphasis on phonetic word attack skills, comprehension, vocabulary building and the use of supplementary materials in the reading program.
675. PROBLEMS IN IMPROVEMENT OF READING AT THE SECONDARY SCHOOL LEVEL (1-5). Pr., teaching experience or departmental approval. Examination of problem areas of effective reading instruction in developmental reading from grades 7-12. Emphasis on techniques and materials for the teaching of comprehension, study skills, vocabulary and other related areas in the reading program and in the content areas of the secondary school.
695. PRACTICUM (1-15). Provides advanced students with experiences closely relating theory and practice, usually carried on simultaneously.
699. RESEARCH AND THESIS (CREDIT TO BE ARRANGED.) May be taken more than one quarter.
725. INTERNSHIP (3-15). Supervised on-the-job experience in a school, college, or other appropriate setting. These experiences, accompanied by regularly scheduled on-campus discussion periods, provide evaluation and analysis of the intern experience.
746. DIRECTED INDEPENDENT STUDY (1-6). Special study in which the student's learning efforts are guided toward desired objectives. Includes evaluation by professor and student at regular intervals.
750. SEMINAR (3-10). May be repeated for credit not to exceed 10 hours.
795. PRACTICUM (1-15). Provides doctoral students with experiences closely relating theory and practice, usually carried on simultaneously.
798. FIELD PROJECT (CREDIT TO BE ARRANGED.) May be taken more than one quarter.
799. RESEARCH AND DISSERTATION (CREDIT TO BE ARRANGED.) May be taken more than one quarter.

SCIENCE EDUCATION

(See Secondary Education [CTS] and Middle School Education [CTD]).

SECONDARY EDUCATION (CTS)

Undergraduate students must select two teaching majors unless they select the composite majors offered in English Language Arts, Mathematics, General Science and Social Science. These programs lead to certification at the high school level, grades 7-12. Endorsements for certification at the Middle School level, grades 4-8 are also available, as is specific certification at only the Middle School level.

For some courses, there are special sections denoted by a letter code corresponding to the areas of specialization. These areas are: (D) Foreign Language, (G) English, (H) Mathematics, (K) Science and (L) Social Science.

102. ORIENTATION (1). Helps new students and transfers from other curricula to understand teacher education and teaching as a profession.
- 110-111-112. DEVELOPMENTAL STUDIES I, II, III (2). (CREDIT NOT COUNTED TOWARD GRADUATION.) Develops skills conducive to successful college study. Emphasis on reading skills and their relation to other language arts. Attention is given to study skills, communication skills for formal and informal use and cultural aspects of communication.
201. EDUCATION (2). Helps prospective teachers in the guidance of students. (A) Art Expression, (J) Music Experiences, (Q) Materials of Instruction.
- 201L. EDUCATION (1). LAB. 2. Laboratory will be taken concurrently with the corresponding lecture course or independent of the lecture.
204. FUNDAMENTALS OF COMPUTER PROGRAMMING. (3). Pr., MH 162 and departmental approval. Introduction to microcomputers and computer programming with emphasis on solution of mathematical problems using BASIC. String variables and introduction to graphics are included.
205. PROBLEMS IN COMMUNICATION (3). LEC. 2, LAB. 2. Language usually taught in the secondary English classrooms with special attention to questioning techniques, student/teacher interaction, standard/non-standard English, semantics and oral/written English.
375. SCIENCE FICTION IN THE SECONDARY SCHOOL PROGRAM (5). Selected works of science fiction with emphasis on use of this genre to augment teaching in the content areas of the secondary school curriculum.
400. APPLIED LINGUISTICS FOR FOREIGN LANGUAGE TEACHERS (3). The application of linguistics in the teaching of foreign languages.
401. TECHNOLOGY IN SCIENCE EDUCATION (3). LEC. 2, LAB. 2. Pr., EM 200 and admission to Teacher Education. Computer hardware and software for effective science teaching.
402. MATHEMATICS PROGRAM AND TEACHING I (3). LEC. 2, LAB. 2. Emphases are diagnostic and prescriptive procedures, theories of learning applied to managing and evaluating mathematics programs.
403. MATHEMATICS PROGRAM AND TEACHING II (3). LEC. 2, LAB. 2. Emphases are historical bases for school mathematics programs, planning, procedures, instructional strategies and problem solving.
404. TEACHING MATHEMATICS: APPLICATION AND TECHNOLOGY (3). LEC. 2, LAB. 2. Uses of calculators and computers in school mathematics and the teaching of applications in mathematics. For math education majors (composite program) who have completed appropriate math/computer science requirements.

Each of the following two courses, CTS 405 and 410, is sectioned as follows: (D) Foreign Language, (K) Science and (L) Social Science.

405. TEACHING IN SECONDARY SCHOOL (3). LEC. 2, LAB. 2. Pr., FED 350 or departmental approval.
410. PROGRAM IN SECONDARY SCHOOL (3). LEC. 2, LAB. 2. Pr., FED 350 or departmental approval.
411. TEACHING ENGLISH: LANGUAGE AND LINGUISTICS (3). LEC. 2, LAB. 2. Pr., FED 350 or departmental approval. Specific teaching strategies in language and linguistics.
412. TEACHING ENGLISH: LITERATURE (3). LEC. 2, LAB. 2. Pr., FED 350 or departmental approval. Specific teaching strategies in literature.
413. TEACHING ENGLISH: RHETORIC AND COMPOSITION (3). LEC. 2, LAB. 2. Pr., FED 350 or departmental approval. Specific teaching strategies in rhetoric and composition.
415. CURRENT TRENDS AND PRACTICES IN AREAS OF SPECIALIZATION (3). LEC. 2, LAB. 2. Pr., FED 350 or departmental approval. The study and application of contemporary curriculum and instructional trends and practices within the areas of specialization of the secondary school program.
420. THE SECONDARY SCHOOL (5). Current thinking about the organization and purpose of secondary schools.
421. SOCIAL SCIENCE CONCEPTS AND METHODS (5). Pr., 25 hours in social sciences. The structure, key concepts and methods of investigation of the social sciences. Emphasis is placed on those social sciences taught in secondary schools.
425. PROFESSIONAL INTERNSHIP (15). Pr., senior standing, admission to Teacher Education prior to Internship, appropriate professional courses. Supervised teaching in a school, accompanied by scheduled discussions to analyze and evaluate the intern's experience.
446. DIRECTED INDEPENDENT STUDY (1-10). Planned individual inquiry, including evaluation by professor and student at regular intervals.

- 450. SPECIAL TOPICS (1-5). Cooperative pursuit of selected concepts and theories, normally in small groups.
- 488. READINGS FOR HONORS (1-10). Individual readings program for student in the Honors Program. Open only to students in the Honors Program with the consent of the Honors advisor.
- 489. HONORS THESIS (3-6). Pr., senior standing in the Honors Program. May be repeated for a maximum of six hours credit. The student thesis is finalized in this course. Open only to students in the Honors Program with the consent of the Honors advisor.
- 495. PRACTICUM (1-10). Experiences allow individual students to relate theory and practice.

ADVANCED UNDERGRADUATE AND GRADUATE

- 501. LANGUAGE STUDY FOR TEACHERS (5). Linguistics in the school curriculum; the child's acquisition of syntax; theories of teaching usage, dialectology, lexicography and grammar; English as a second language, non-verbal communication in the classroom; research studies in language and linguistics and their applications to classroom teaching.
- 502. RHETORIC AND COMPOSITION FOR TEACHERS (5). Topics and current trends in teaching rhetoric and composition. Classical and new rhetorics; theories of paragraph analysis; behavioral approaches to composition; pupil motivation and the composing process; current research; evaluation.

COURSES FOR GRADUATE STUDENTS

- 640-641. ADVANCED STUDY OF HIGH SCHOOL GENERAL SCIENCE (4-5). Intensive study of topics from the area of the high school general science program.
- 649. THE SECONDARY SCHOOL PROGRAM. (4-5). Major curriculum areas and teaching practices in the modern secondary school. Attention given to implications of research and theory for the total secondary school program.

Each of the following may be taken in the following areas of specialization: (D) Foreign Languages, (G) English/Language Arts, (H) Mathematics, (K) Science, (L) Social Studies.

- 625. INTERNSHIP (5-15). Supervised, on-the-job experiences in a school, college, or other appropriate setting. These experiences will be accompanied by regularly scheduled, on-campus discussion periods provide positive evaluation and analysis of the intern experience.
- 646. DIRECTED INDEPENDENT STUDY (1-6). Special study in which the student's learning efforts are guided toward desired objectives. Evaluation by professor and student of work accomplished at regular intervals.
- 650. SEMINAR (3-10). May be repeated for credit not to exceed 10 hours.
- 651. RESEARCH STUDIES IN AREA OF SPECIALIZATION (4-5). Review, analysis and interpretation of available research with emphasis on designing new research to meet the changing needs of the school.
- 652. CURRICULUM AND TEACHING IN AREA OF SPECIALIZATION (4-5). Teaching practices and reappraisal of selecting experiences and content for curriculum improvement.
- 653. ORGANIZATION OF PROGRAM IN AREA OF SPECIALIZATION (4-5). Program, organization and development of basic and supplementary materials for guiding teachers, faculties and school systems in the continuous improvement of curriculum and teaching practices.
- 654. EVALUATION OF PROGRAM IN AREA OF SPECIALIZATION (4-5). Evaluation and investigation of teaching effectiveness with attention also given to the utilization of human and material resources and the coordination of areas of specialization.

Prerequisites for the 651, 652, 653 and 654 courses are 18 hours of appropriate subject matter and 36 hours of psychology and professional education.

- 695. PRACTICUM (1-15). Provides advanced students with experiences closely relating theory and practice, usually carried on simultaneously.
- 699. RESEARCH AND THESIS (CREDIT TO BE ARRANGED.) May be taken more than one quarter.
- 725. INTERNSHIP (3-15). Supervised on-the-job experience in a school, college, or other appropriate setting. These experiences, accompanied by regularly scheduled on-campus discussion periods, provide evaluation and analysis of the intern experience.
- 746. DIRECTED INDEPENDENT STUDY (1-6). Special study in which the student's learning efforts are guided toward desired objectives. Includes evaluation by professor and student at regular intervals.
- 750. SEMINAR (3-10). May be repeated for credit not to exceed 10 hours.
- 795. PRACTICUM (1-15). Provides doctoral students with experiences closely relating theory and practice, usually carried on simultaneously.
- 798. FIELD PROJECT (CREDIT TO BE ARRANGED.) May be taken more than one quarter.
- 799. RESEARCH AND DISSERTATION (CREDIT TO BE ARRANGED.) May be taken more than one quarter.

SOCIAL SCIENCE EDUCATION

(See Secondary Education [CTS] and Middle School Education [CTD]).

Discrete and Statistical Sciences (DMS)

Professors Phelps, Head, Henderson, Hoffman, Johnson, Teirlinck and Wall
Alumni Professor Rodger

University Professor Lindner

Associate Professors Hankerson, Harris, Jenda, Leonard, Veeh, West and Zinner

Assistant Professor Menezes

APPLIED DISCRETE MATHEMATICS

263. INTRODUCTION TO DISCRETE ALGORITHMIC MATHEMATICS (3). Pr., MH 266. The fundamental algorithms of discrete mathematics are covered. Integer and number theoretic algorithms; linear programming; combinatorial optimization including graph algorithms; applications.
371. DISCRETE MATHEMATICS I (3). Pr., MH 266 or 337. Elementary logic, predicate calculus; induction; finite state machines, deterministic and nondeterministic automata, regular grammars.
372. DISCRETE MATHEMATICS II (3). Pr., MH 266 or 337. Equivalence relations, partial order relations, functions, n -ary relations. Graphs: special types, isomorphism, trees, traversal algorithms. Digraphs: transitive closure, connectivity.
479. HONORS THESIS (3-6). Pr., Senior status and enrollment in Auburn University Honors Program. May be repeated once for maximum of six hours credit.
491. SPECIAL PROBLEMS (1-5). Pr., departmental approval, junior standing. An individual problems course. Each student will work under the direction of a staff member on some problem of mutual interest.

ADVANCED UNDERGRADUATE AND GRADUATE

500. MATHEMATICAL MODELING – DISCRETE (5). Pr., MH 161. Introduction to mathematical models and related techniques. Course includes general principles involving discrete deterministic problems and a detailed, specific term-project.
512. INFORMATION THEORY (5). Pr., MH 264. Discrete probability, information and entropy, channel capacity, and optimal relative input frequencies, variable-length codes and data compression (the Kraft and McMillan inequalities, the Huffman's algorithm), block codes and error correction, maximum likelihood decoding, Shannon's Noisy Channel Theorem.
513. ALGORITHMIC METHODS IN COMBINATORICS (5). Pr., DMS 575 or CSE 360 or departmental approval. Basic algorithmic and computational methods used in the solution of fundamental combinatorial problems.
514. DATA COMPRESSION (3). LEC. 3. Pr., MH 163 or equivalent. Shannon, Fano and Huffman lossless replacement schemes; higher order encoding, arithmetic encoding, adaptive Huffman and arithmetic encoding; dictionary methods (Lempel-Ziv) and variants, e.g. GNU zip, Unix Compress; image compression, discrete transform methods (JPEG).
515. ALGEBRAIC CODING THEORY I (5). Pr., MH 266 or 337. Binary codes, linear codes, cyclic codes, Hamming codes, BCH codes; maximum likelihood decoding; error detection and correction; coset decoding.
516. ALGEBRAIC CODING THEORY II (5). Pr., MH 515. Theory of and implementable algorithms for codes of current practical and theoretical importance. Generalized BCH codes, Reed-Muller codes, Kerdock and Preparata codes, Reed-Solomon codes, quadratic residue codes, Justesen and concatenated codes, convolution codes.
517. COMPUTATIONAL METHODS IN FINITE FIELDS (5). Pr., DMS 263 or MH 266. Structure of finite fields. Computational methods for constructing irreducible polynomials and for factoring polynomials over finite fields. Emphasis on algorithms and their applications to Latin squares, finite geometries, design theory, cryptography and coding theory.
518. CRYPTOGRAPHY (5). Pr., MH 266 or 337. Classical cryptosystems, the Data Encryption Standard, one-way functions and relevant number theoretic problems (factoring, primality testing, the discrete logarithm problem), RSA and other public key cryptosystems, digital signatures, authentication protocols.
520. COMPUTER ALGEBRA (5). LEC. 4, LAB. 2. Pr., MH 266 or 337. Introduction to Computer Algebra System MAPLE and the theory of Groebner bases over fields, stressing both computational and theoretical aspects. Applications to the ideal membership problem solving systems of polynomial equations, kinematic problems and geometry will be studied.
530. THEORY OF DIFFERENCE EQUATIONS (5). Pr., MH 266 or equivalent. Linear difference equations, initial value problems, Green's functions, boundary value problems, system, periodic solutions, nonlinear difference equations, models. Application to discrete math and operations research emphasized.
571. LINEAR OPTIMIZATION (5). Pr., MH 266 or 337. Simplex algorithm and duality, shortest path, network flow, minimal cost flow, out-of-kilter method, assignment problems; matching; emphasis on both theory and algorithms for applied problems.
573. ENUMERATION (5). Pr., MH 264. Permutations and combinations, generating functions, inclusion-exclusion, cycles of permutations, occupancy, partitions, trees, Polya trees.
575. GRAPH THEORY (5). Pr., MH 266 or 337. Graph algorithms; matchings, edge-colorings, vertex-colorings and scheduling problems; Hamilton cycles and Euler tours; connectivity, spanning trees, disjoint paths and reliable networks; directed graphs, extremal graph theory; planar graphs.
577. COMBINATORIAL DESIGNS (5). Pr., DMS 517 or MH 331. Latin squares, mutually orthogonal latin squares, orthogonal and perpendicular arrays, Steiner triple systems, block designs, difference sets and finite geometries.
598. SPECIAL TOPICS (1-5). Pr., departmental approval. Topics may vary as needed. May be taken for credit more than once.

COURSES FOR GRADUATE STUDENTS

613. ALGORITHMS IN DISCRETE OPTIMIZATION (5). Pr., DMS 575 or CSE 527 or departmental approval. Emphasis on practical methods for handling intractable optimization and combinatorial problems. Introduction to NP-completeness and its ramifications. Basic algorithmic methods considered include greedy, approximation and probabilistic algorithms, depth-first search, branch and bound and hill climbing.
- 620-621. ALGORITHMIC ALGEBRA I, II (5-5). Pr., DMS 520 or departmental approval. Fundamental aspects of algorithmic algebra. Computer Algebra System MAGMA. Groebner bases over noetherian rings and Hilbert's Basis Theorem. Computability of rings and syzygy computations. Hilbert's Nullstellensatz and algorithms for finding Groebner bases for primary components and associated primes of primary decompositions. Dimensions and the Hilbert function. Groebner bases for polynomial modules and other module-theoretic algorithms. Other selected topics.
631. DISCRETE TRANSFORMS (5). Pr., DMS 530 or MH 265 and 266. Introduction to discrete transforms, such as discrete Fourier, Walsh, Z and Hadamard transforms and their applications to difference equations, signal processing and data transmission in general. Applications to time series models, queueing problems and related statistical areas may also be considered.
- 670-671-672. FINITE GEOMETRY (5-5-5). Pr., MH 537 or equivalent. Relationship between geometry and linear algebra over finite fields, as well as applications in combinatorial designs. Linear spaces, planar spaces, automorphism groups, closure spaces, dimension theory in closure spaces, projective and affine spaces over finite fields. Perspectives and projectivities. The fundamental theorem of projective geometry. Duality and polarities. Quadrics. Ovals and ovoids. Inversive, Laguerre and Minkowski planes. Selected other topics.
673. ADVANCED TOPICS IN ALGEBRAIC CODING THEORY (5). Pr., DMS 515. Structure and theoretical properties of codes are studied, including some of the topics; weight distributions of codes and their duals, self-dual codes, cyclic codes, designs from codes and bounds on the size of a code.
675. ADVANCED TOPICS IN GRAPH THEORY (5). Pr., DMS 575. Topics of current interest and recent research in graph theory. Areas covered may include edge colorings of graphs, random graphs, Ramsey theory, network flows and algebraic graph theory.
677. ADVANCED TOPICS IN COMBINATORIAL DESIGN THEORY (5). Pr., DMS 577. Topics of current interest and recent research in combinatorial design theory. Areas covered may include latin squares, triple systems, embeddings and nestings of designs, orthogonal arrays, Steiner pentagon systems.
679. SPECIAL PROJECTS IN COMBINATORICS (3). A project is selected in conjunction with the student's advisory committee, and is to be based on problems of current interest and may involve the use of a computer.
690. DIRECTED READING (CREDIT TO BE ARRANGED.)
698. SPECIAL TOPICS (1-5). Pr., departmental approval. Topics vary as needed. May be taken for credit more than once.
699. RESEARCH AND THESIS (CREDIT TO BE ARRANGED.) May be taken more than one quarter.
790. DIRECTED READING (CREDIT TO BE ARRANGED.) Pr., registration in a doctoral program and departmental approval.
798. SPECIAL TOPICS (1-5). Pr., departmental approval. Topics may vary as needed. May be taken for credit more than once.
799. RESEARCH AND DISSERTATION (CREDIT TO BE ARRANGED.)

STATISTICS

215. INTRODUCTORY STATISTICS (5). LEC. 4, LAB. 2. Pr., MH 160. Fall, Winter. Introduction to empirical frequency distributions, descriptive statistics, elementary probability, sampling, estimation, testing hypotheses, linear regression, correlation and the analysis of variance.
216. INTRODUCTORY BIOLOGICAL COMPUTATIONS (3). LEC. 3. Pr., sophomore level. Winter, Spring. Introductory use of the computer for agricultural and biological computations and data reduction. Introduction to FORTRAN programming and to effective and valid use of available program packages in biology.

ADVANCED UNDERGRADUATE AND GRADUATE

501. BIOLOGICAL STATISTICS (5). LEC. 4, LAB. 2. Pr., MH 161. Fall, Winter, Spring. Basic concepts of experimental statistics, distributions, confidence limits, tests of significance, analysis of variance, linear correlation and regression. For advanced undergraduates and as a beginning course for graduate students in biological sciences. Credit not allowed for both 501 and 600.
511. SAS PROGRAMMING (2). LEC. 2. Pr., DMS 501 or equivalent and DMS 216 or equivalent. Fall, Spring. Introduction to statistical analysis and management of data files using SAS, The Statistical Analysis System. Data entry and management are stressed with selection and execution of the important statistical procedures.
- 560-561. STATISTICS I, II (5-5). Pr., MH 163 and a probability course. Statistical methods. Emphasis on statistical procedures relevant to problems arising in education, sciences, agriculture, etc.
562. NONPARAMETRIC STATISTICS (5). Pr., DMS 561. Introduction to nonparametric statistical theory and methods. Order statistics and rank, nonparametric tests of location and scale. Emphasis on fundamental statistical ideas.
582. FOUNDATIONS OF STATISTICS FOR SECONDARY SCHOOL TEACHERS* (4). Pr., one course above MH 163. Discrete probability distributions; introduction to statistical inference.
591. TOPICS IN STATISTICS (1-5). (May be repeated for credit). Pr., MH 567 or departmental approval. Mathematical treatment of certain topics in statistics. Topics will vary from year to year and will be chosen from the following: applied stochastic processes, time series, experimental design, sampling theory, non-parametric methods and others.

COURSES FOR GRADUATE STUDENTS

600. EXPERIMENTAL STATISTICS I (5). Basic concepts of statistical models and inferential methods in experimental research, including probability and sampling distributions; correlation, regression and categorical data analysis interval estimation and hypothesis testing; and simple designs of experiments and model diagnostic.
601. EXPERIMENTAL STATISTICS II (5). LEC. 4, LAB 2. Pr., DMS 600 or equivalent. Winter. Statistical analysis of common experimental designs including: completely randomized, randomized complete block, latin square and split plot designs; ANOVA, ANACOVA, multiple comparison procedure and design efficiency.
602. LEAST SQUARES ANALYSIS OF EXPERIMENTS (5). LEC. 4, LAB. 2. Pr., DMS 601 or equivalent. Spring, even years. Analysis and interpretation of experimental data by least squares procedures, general linear models.
625. SPECIAL PROBLEMS (CREDIT TO BE ARRANGED.) (A) Biological Statistics. (B) Statistical Genetics.
626. SPATIAL STATISTICAL METHODS IN AGRONOMY (3). Pr., DMS 501 or equivalent. Principles and techniques involved in the description and estimation of spatial data. Emphasis on methods used to describe the spatial behavior of variables. (Cross listed with AY 626).
- 680-681. LINEAR MODELS I, II (5-5). Pr., MH 266 or equivalent. Coreq., DMS 560 or departmental approval. A rigorous development of some of the important topics of applied statistics. The multivariate normal distribution, analysis of variance, regression. Aspects of experimental design.
682. MULTIVARIATE ANALYSIS (5). Pr., DMS 680 Hotelling's T^2 test, discriminant analysis, Wilk's lambda criterion, the multivariate analysis of variance and others.
- 683-684-685. APPLIED STOCHASTIC PROCESSES I, II, III (5-5-5). Pr., DMS 560 or equivalent. Introduction to stochastic processes and their use as models in areas of application, especially applications to statistics and operations research. Statistical estimation of process parameters. Markov chains and Markov processes. Renewal processes. Branching, epidemic, birth and death and queueing processes.
- 686-687. TIME SERIES ANALYSIS (5-5). Pr., DMS 560. Statistical inference for stationary sequences and processes; in particular, estimation, prediction and filtering. Some aspects of spectral theory.
688. TOPICS IN STATISTICS (1-5). (May be repeated for credit.) Pr., DMS 561 or departmental approval. A mathematical treatment of certain topics in probability and statistics. Topics will vary from year to year and will be chosen from the following: applied stochastic processes, time series, experimental design, sampling theory, non-parametric theory and methods and others.
689. RESEARCH AND SPECIAL PROJECT IN STATISTICS (Credit to be arranged). May be repeated for credit.

Economics (EC)

Professors Laband, Head, Caudill, Ekelund, Garrison, Hebert, Jackson, Kaserman, Long, Thompson and Whitten

Associate Professors Ault, Barnett, Beard, Beil, Gropper and Saba

Assistant Professors Thornton and Wells

A 2.0 GPA is required for enrollment in any Business course at the 300-level and above. This rule applies to both Business and non-Business students.

202. ECONOMICS I (5). Economic principles with emphasis on microeconomic aspects of the economy. (Credit not allowed for this course and AEC 202.)
203. ECONOMICS II (5). Pr., EC 202. Economic principles with emphasis on macroeconomic aspects of the economy. (Credit not allowed for this course and AEC 200 or EC 200.)
206. SOCIO-ECONOMIC FOUNDATIONS OF CONTEMPORARY AMERICA (3). The social and economic developments which promote an understanding of present day American society. (Credit not allowed for this course and EC 202.)
301. ECONOMIC PRINCIPLES AND BUSINESS POLICY (5). An accelerated course in economic principles. Offered for business minors only. (Credit not allowed for this course and EC 200, 202 or 203. This course will not count as credit for any economics major).
302. INTERMEDIATE MICROECONOMICS (5). Pr., EC 202 and junior standing. Theory of pricing under varying market conditions and distribution of income among the factors of production. Credit not allowed for EC 302 and 551.
330. ECONOMICS OF SPORTS (5). Pr., EC 202 and junior standing. Applies economic theory to analyze the market for professional and collegiate sports. Emphasis on the theory of professional team sports and empirical evidence from the economics literature.
340. ENVIRONMENTAL ECONOMICS (5). Pr., EC 302 or departmental approval. Economic analysis applied to topical environmental issues such as pollution, preservation vs. development, economic growth and population.
350. LABOR ECONOMICS (5). Pr., EC 202, 200 or 203, 302 and junior standing. A theoretical and institutional examination of the labor market, including wage theories, unionism, the economics of collective bargaining and income security.
360. MONEY AND BANKING (5). Pr., EC 202, 200 or 203 or AEC 200 and 202, junior standing. Money, credit and banking including consideration of monetary systems, foreign exchange and commercial banking with relation to the Federal Reserve System.
400. STUDENT INTERNSHIP PROGRAM (1-10). Pr., junior standing and selection by faculty committee. S/U grading.

433. LAW AND ECONOMICS (5). Pr., EC 202 or departmental approval and junior standing. Description of the many substantive areas in which law has an economic foundation and an analysis of the ways in which law affects economic relations.
470. HONORS READINGS (1-6). Pr., open only to persons in the University Honors Program and with consent of the student's Honors Advisor.
471. GOVERNMENT, BUSINESS AND SOCIETY (5). Pr., EC 202, 200 or 203, 302 and junior standing. Economic role of government in a free enterprise economy. Emphasis on the application of microeconomic theory to public policy issues.
472. HONORS THESIS (1-6). Pr., EC 302. Open only to persons in the University Honors Program and with consent of the student's Honors Advisor.
490. SPECIAL PROBLEMS (1-10). Pr., departmental approval, junior standing. May be repeated. Investigation and research into economic problems of special interest to the student and instructor. S/U grading.

ADVANCED UNDERGRADUATE AND GRADUATE

502. ADVANCED MICROECONOMICS (5). Pr., EC 202, 302. Mathematical analysis of pricing and production in a market setting. Topical coverage includes the economics of information and uncertainty and analysis of strategic behavior.
552. COMPARATIVE ECONOMIC SYSTEMS (5). Pr., EC 203. Analysis of the rival economic doctrines of Capitalism, Socialism and Communism.
553. ECONOMICS OF GROWTH AND DEVELOPMENT (DESARROLLO ECONOMICO) (5). Pr., EC 203. Taught in English or Spanish. Concepts, principles and problems of economic growth and development with consideration of appropriate policies for both underdeveloped and advanced economies.
554. HISTORY OF ECONOMIC THOUGHT (5). Pr., EC 203. The development of economic ideas, principles and systems of analysis from early times to the present.
555. INDUSTRIAL ORGANIZATION (5). Pr., EC 203 and EC 302. The relationship of market structure to the pricing behavior of business and industry. Topics: regulation, research and development and technological change.
556. INTERMEDIATE MACROECONOMICS (5). Pr., EC 203. The measurement of national output, income and employment theory, general equilibrium theory and theories of interest, investment and consumption.
557. ECONOMIC HISTORY OF EUROPE (5). Analysis of the development of the European economy and the resulting impact on the U.S. and the world.
558. ECONOMIC HISTORY OF THE UNITED STATES (5) Pr., junior standing. The evolution of the American economy from European origins to the present.
559. REGIONAL ECONOMIC DEVELOPMENT (5). Pr., EC 203. Analytical discussion of the principles associated with the regional development of a national economy. Emphasis is on the problems of lagging regions and on the experience of the U.S.
562. INTERMEDIATE MONETARY THEORY AND POLICY (5). Pr., EC 360 and junior standing. Attention given to theoretical and empirical studies. Readings from original sources required.
565. PUBLIC FINANCE (5). Pr., EC 202 and junior standing. An examination of the economic rationale of the public sector; supply and demand of public goods. Principles of efficient and equitable taxation and government spending.
568. BUSINESS HISTORY OF THE UNITED STATES (5). Pr., junior standing. The origins and developmental patterns of American business with an emphasis on the role of the business community in the economic and political evolution of the U.S.
571. INTERNATIONAL ECONOMICS (5). EC 202 and 200 or 203. An examination of the pure theory and monetary aspects of international trade.
575. AUSTRIAN ECONOMICS (5). Pr., EC 202 and 200 or 203. Introduction to the methodology of the Austrian School, its contributions and extensions of the core theory.
580. BUSINESS AND ECONOMIC FORECASTING (5). Pr., EC 202 and 200 or 203, and MN 301 or departmental approval. Forecasting, with emphasis on the interpretation of macroeconomic forecasting methods and the development of competency in forecasting at the level of the firm.

COURSES FOR GRADUATE STUDENTS

601. FOUNDATIONS OF ECONOMICS (3). Pr., for non-business students, consent of Director of the MBA Program, College of Business. An accelerated course combining both micro and macroeconomics and implications for the manager.
602. MICROECONOMICS I (3). Pr., EC 302. Principles of consumer behavior as they apply to economic choice in consumption, exchange and labor supply.
603. MICROECONOMICS II (3). Pr., EC 302. Principles of producer behavior as they apply to producer choice in production and factor utilization.
604. MICROECONOMICS III (3). Pr., EC 602, EC 603. General equilibrium analysis, welfare economics and other topics in microeconomic theory.
605. MACROECONOMICS I (3). Pr., EC 556 and graduate standing. Evaluation of fundamental theoretical and policy-oriented issues in macroeconomic, emphasizing post-Keynesian developments.
606. MACROECONOMICS II (3). Pr., EC 556 and graduate standing. Advanced monetary theory and the neoclassical synthesis.
607. REGIONAL AND URBAN ECONOMICS (3). Pr., departmental approval and graduate standing. Economic forces involved in planning a dynamic urban region; principles and application of regional economic models.

608. MACROECONOMICS III (3). Pr., EC 605, EC 606. Advanced analysis of macrodynamics.
611. ECONOMIC DEVELOPMENT (5). Pr., departmental approval and graduate standing. Conceptual and empirical analysis of economic development with emphasis on less developed countries and case studies of development problems.
614. CAPITAL THEORY I (3). Pr., EC 603 or departmental approval. Theory of capital resource allocation in relation to saving, investment, interest rates and production.
615. CAPITAL THEORY II (3). Pr., EC 614 or departmental approval. Optimal investment decisions and interest rate determination under uncertainty.
616. CAPITAL THEORY III (3). Pr., EC 615 or departmental approval. Further topics in capital theory, including selected asset pricing models.
623. LABOR MARKET ANALYSIS (3). Pr., EC 603 or departmental approval. Advanced examination of consumer and producer behavior in labor markets, with emphasis on recent empirical studies.
624. HUMAN CAPITAL (3). Pr., EC 623. Analysis of the causes and consequences of the choices made both by workers and firms to invest in labor.
625. TOPICS IN LABOR ECONOMICS (3). Pr., EC 623. Extensive treatment of topics in labor market analysis.
633. ECONOMIC ANALYSIS OF THE LAW (3). Pr., EC 302 and departmental approval. Advanced analysis of the substantive areas in which law has an economic foundation and of the ways law affects economic relations.
634. ECONOMICS OF REGULATION (3). Pr., EC 302 and departmental approval. Analysis of contemporary theories of economic regulation and examination of empirical evidence on effects of extra-market controls.
635. TOPICS IN INDUSTRIAL ORGANIZATION AND REGULATION (3). Pr., EC 634, 636. Advanced treatment of topics in industrial organization and regulation of economic activity.
636. INDUSTRIAL ORGANIZATION (3). Pr., EC 302 and departmental approval. Advanced studies in the determinants of market structure and the effects of market structure on industrial activity.
640. SEMINAR IN ENVIRONMENTAL ECONOMICS (3). Pr., EC 302 and departmental approval. Advanced analysis of pricing and allocation of renewable and non-renewable resources.
645. SEMINAR IN POLITICAL ECONOMY (3). Pr., graduate standing and departmental approval. Survey of ideas ranging beyond traditional economic boundaries but bearing on the appraisal of economics institutions and policies: freedom, democracy, rights, utility, justice, fairness, equality, income (re)distribution and public choice.
650. ECONOMIC SEMINAR (1-10). Pr., departmental approval or graduate standing. Intensive study and analysis of selected economic problems.
651. MACROECONOMICS FOR AN OPEN ECONOMY (5). Pr., EC 501, MN 301 and, for non-business students, consent of MBA program director. Macroeconomic theory and business forecasting of the aggregate economy.
652. 20TH CENTURY ECONOMIC THOUGHT AND INSTITUTIONS (3). Pr., departmental approval. Examines economic ideas and policy for selected economists and periods in the 20th century. Analyzes how contemporary economic theory helps explain the emergence, effectiveness and decline of American economic institutions.
655. HISTORY OF ECONOMIC THOUGHT I (3). Pr., EC 554 or departmental approval. Analysis and study of classical contributions to economics, from early times through Karl Marx.
656. MANAGERIAL ECONOMICS (5). Pr., EC 601 or equivalent and for non-business students, consent of the MBA program director. Microeconomic theories of the firm and of markets, with emphasis on their applications to current business issues.
657. HISTORY OF ECONOMIC THOUGHT II (3). Pr., EC 554 or departmental approval. Analysis and study of neoclassical contributions to economics, circa 1870 to the present.
658. SEMINAR IN THE ECONOMIC HISTORY OF THE U.S. (5). Pr., EC 558 or departmental approval. Recent developments in the field of knowledge constituting the economic history of the U.S.
659. STATISTICAL METHODS FOR BUSINESS AND ECONOMICS (5). Pr., MH 161 or equivalent, MN 301 or equivalent, AEC 200 or equivalent. Application of statistical methods and development, estimation and evaluation of models for analysis of business and economic issues. (Cross listed as AEC 659.)
660. ECONOMETRICS I (3). Pr., MH 161 and MN 301. Probability theory, distribution theory, univariate regression theory and other problems in economics and statistics.
661. ECONOMETRICS II (3). Pr., departmental approval. Multivariate regression theory, errors in variables, serial correlation, distributed lags and other problems in economics and statistics.
662. SEMINAR IN MONEY AND BANKING (5). Pr., EC 605 or departmental approval. Goals, procedures and achievements in attaining monetary objectives at home and abroad. Emphasis is given to macro-money models and effects of monetary policy on economic activity.
663. ECONOMETRICS III (5). Pr., EC 661. Extension of topics covered in EC 661 geared to understanding and implementing econometric techniques currently employed in advanced empirical research. Topics include estimation and inference in simultaneous equation systems, qualitative and limited dependent variables, non-nested testing and Box-Jenkins methods of time series analysis.
664. EXTERNALITIES (3). Pr., EC 604 or departmental approval. Advanced analysis of pricing and allocation of economic goods when property rights are not well defined.
665. SEMINAR IN PUBLIC FINANCE (3). Pr., EC 565 or departmental approval. Advanced microeconomic theory of the public sector.
666. PUBLIC CHOICE (3). Pr., EC 665 or departmental approval. Advanced analysis of governmental and other not-for-profit sectors of the economy.

667. **MANAGING IN A REGULATED ECONOMY (5).** Application of microeconomic analysis to antitrust law, its goals and enforcement. Topics include monopolization, price fixing, mergers and vertical restraints.
668. **ECONOMETRICS IV (5).** Pr., EC 663. Additional topics and extensions of topics covered in EC 663. Includes extensions of Logit, Probit and Tobit models, frontier estimation, mixture models, Hazaro models and topics in time series analysis.
671. **INTERNATIONAL ECONOMICS AND FINANCE (3).** Pr., departmental approval. Advanced balance of payments analysis, exchange rates, international investment, financial institutions and current problems.
672. **ADVANCED INTERNATIONAL TRADE (3).** Pr., EC 671 or departmental approval. Advanced trade theory, comparative advantage, free trade and protectionism, international factor flows, trade policy, international industrial organization, empirical tests and applications.
673. **INTERNATIONAL TRADE POLICY (3).** Pr., EC 672 or departmental approval. Application of theory to practical issues of policy, including how government policy influences production, international trade and income distribution.
674. **INTERNATIONAL MACROECONOMIC POLICY (3).** Pr., departmental approval. Concentrates on applied aspects of the transmission and coordination of financial policy among countries.
685. **MATHEMATICAL ECONOMICS (5).** Pr., MH 161, EC 302 and 556. Fundamental propositions of microeconomics and macroeconomics derived mathematically. Differentiation, static analysis, matrix algebra, comparative statics, optimization, difference equations, differential equations and game theory.
686. **TOPICS IN MATHEMATICAL ECONOMICS (3).** Pr., EC 685. Topics from mathematical methods in economics. Nonlinear programming, duality, dynamic optimization, difference equations, differential equations and game theory.
690. **SPECIAL PROBLEMS (1-5).** Pr., graduate standing. Variable content in the economics area.
698. **ECONOMICS WORKSHOP (1).** Pr., advanced graduate standing. Research and discussion of topics in economics.
699. **RESEARCH AND THESIS (CREDIT TO BE ARRANGED.)**
799. **RESEARCH AND DISSERTATION (CREDIT TO BE ARRANGED.)**

Educational Foundations, Leadership and Technology (EFLT)

Professors Kaminsky, *Head*, Burkhalter, Gorrell, G.M. Halpin, G.W. Halpin, Kunkel, Lauderdale, Sauser and Spencer

Associate Professors Bannon, Kochan, Lechner, Ledford, Miller, Shannon, Twale and Whang
Assistant Professors Akey, Brush, Hackett, and Hannafin

EDUCATIONAL LEADERSHIP (EDL)

401. **ORGANIZATION AND SUPPORT OF PUBLIC EDUCATION (2).** The organization, administration and financing of American public education.

EDUCATIONAL MEDIA (EM)

200. **TEACHING WITH TECHNOLOGY (2).** LAB. (4). Introduction to computer-based technologies and their integration into teaching.
370. **MICROCOMPUTER CONCEPTS AND APPLICATIONS IN EDUCATION (4).** LEC. 3, LAB. 2. Introduction to microcomputer uses in education.

ADVANCED UNDERGRADUATE AND GRADUATE

510. **MEDIA FOR CHILDREN (4).** Pr., junior standing. Examination and evaluation of print and other types of materials in view of their relevance to the needs and interests of various age and grade levels of elementary school children. Study of selection aids, principles and criteria for selecting materials.
530. **REFERENCE MATERIALS AND SERVICES (4).** Pr., junior standing. Study and evaluation of basic reference sources for learning resources centers. Introduction to research methods needed in locating information to support the curriculum of the school.
550. **CLASSIFICATION AND CATALOGING OF MEDIA (4).** Pr., junior standing. Principles and procedures of classifying and cataloging books and other printed materials, filmstrips, recordings and community resources. The vertical file, the Dewey decimal system of classification, Wilson and Library of Congress printed cards and subject headings are studied.
570. **THE MICROCOMPUTER AS AN EDUCATIONAL MEDIUM (4).** LEC. 3, LAB. 2. Pr., junior standing. Applications of microcomputers in education for instruction and administration, present and future.
600. **ORGANIZATION AND ADMINISTRATION OF PUBLIC EDUCATION (4-5).** Introductory course for superintendents, principals, teachers and other educational leaders. Topics include: purposes of organization and administration; organization and administration of federal, state and local levels; financial support and accounting; operation of plant; school-community interaction and personnel administration. Required for the Class "A" Alabama Education Administrator Program.
602. **SCHOOL MANAGEMENT (4-5).** Procedures and practices in educational finance at the business or operational level. Attention to budgeting, accounting, purchasing, transportation, cost analysis and management of human and material resources and the experiences necessary to become a successful, reflective manager in the schools of the future. Required for the Class "A" Alabama Education Administrator Program.

603. SCHOOL FINANCE AND BUSINESS ADMINISTRATION (4-5). Relationships among educational finance, educational program, tax structures, foundation programs and internal accounting. Theories of public finance and economic principles relating to financial support of educational systems at local, state and federal levels.
604. CURRICULUM AND INSTRUCTIONAL LEADERSHIP (4-5). Provides students with the knowledge and skill necessary for deriving principles to guide the processes of planning, designing and evaluating curriculum in training and educational settings. Required for the Class "A" Alabama Education Administrator Program.
606. PERSONNEL ADMINISTRATION (4-5). To assist superintendents, supervisors, principals and other educational leaders in acquiring knowledge and developing understanding with respect to the relationships between effective personnel administration and the quality of education. Includes developing, maintaining and evaluating staff development activities and programs; understanding recent research in current areas of interest. Required for the Class "A" Alabama Education Administrator Program.
607. EDUCATIONAL PLANT MAINTENANCE (4-5). Relationship of educational plant maintenance and operation to educational program; procedures in educational plant maintenance and operation; safety factors; trends in modernization and new plant planning.
608. CONSTITUTIONAL, STATUTORY, FINANCIAL AND JUDICIAL FOUNDATIONS OF EDUCATION (4-5). Constitutional and statutory provisions for education and an analysis of judicial decisions affecting education. Topics include authority and responsibility of the teacher; rights, privileges and responsibilities of students; use of school property, taxation; curriculum, contracts and retirement provisions; contractual capacity and liability; transportation. Required for the Class "A" Alabama Education Administrator Program.
617. MENTOR TRAINING (4). Pr., Class "A" Certification in Educational Administration. For persons seeking the Class "AA" Certification in Educational Administration. Provides theoretical framework and educational opportunities for application of skills in mentoring.
620. FUNDAMENTALS OF LEADERSHIP AND SUPERVISION (4-5). Introductory studies of the leadership process, including theoretical framework in which leadership takes place; the purposes, functions and processes of supervision and leadership; administrative and supervisory tasks and skills; and methods of evaluating leadership and supervisory roles.
621. ADVANCED STUDIES OF EDUCATIONAL LEADERSHIP AND SUPERVISION (4-5). Pr., EDL 620 or departmental approval. Advanced study of current theories, concepts and principles of leadership and their in-depth application to educational roles. Emphasis is on the responsibility of the educational administrator for effective leadership in the school and the community and the responsibility for leadership in the continuous development and evaluation of staff competence and role performance.
623. ADVANCED APPLICATIONS OF INSTRUCTIONAL SUPERVISION THEORY (4-5). Pr., EDL 620. Selection and development of supervisory techniques for improvement of classroom instruction; emphasis on interaction analysis, observation techniques, micro-teaching, team supervision, management by objectives.
625. INTERNSHIP (5-15). Provides advanced students with supervised, on-the-job experiences in a school, college, or other appropriate setting. These experiences will be accompanied by regularly scheduled, on-campus discussion periods provide positive evaluation and analysis of the intern experience. Required for the Class "A" Alabama Education Administrator Program.
631. CURRICULUM THEORIES (4-5). Pr., EDL 604 or equivalent. Advanced study of major curriculum theories with emphasis on theories which have significance in the analysis of contemporary educational practice.
632. THEORIES FOR DESIGNING INSTRUCTION (4-5). Pr., EDL 604 or equivalent. Advanced study and application of theories relating to processes for the design of instruction for various educational settings with emphasis on the development of personalized process models. Attention is given to the relationship of learning and instructional theories.
634. CURRICULUM AND INSTRUCTION DEVELOPMENT (4-5). Pr., EDL 604, EDL 631 and 632 or equivalent. Utilization of curriculum and instruction theories and research for the purpose of developing comprehensive educational programs or courses for various types and levels of organizations.
635. CURRICULUM AND INSTRUCTION APPLICATION (4-5). Pr., EDL 634 and departmental approval. Application of the processes of curriculum and instruction planning, implementation and evaluation in an existing organization.
640. EDUCATIONAL PLANT PLANNING (4-5). Development of educational plants; relationships between curriculum and plant; trends in plant design; analysis of physical conditions; relationships of professional and lay personnel in educational plant planning.
641. EDUCATIONAL FORECASTING (4-5). Pr., advanced statistics course. Systematic review and analysis of futures literature and research and their implications for education. Development and technological forecasting techniques, both quantitative and qualitative. Forecasting of possible futures and identification of possible alternatives.
646. DIRECTED INDEPENDENT STUDY (1-6). Special study in which the student's learning efforts are guided toward desired objectives. Includes evaluation by professor and student at regular intervals.
647. STUDIES FOR COMPREHENSIVE EDUCATIONAL PLANNING (4-5). Principles and procedures for collecting, analyzing and utilizing data in the process of educational planning, including: community characteristics, including power structure; economic bases and population; system characteristics, including administrative organization, finance, personnel, physical facilities and instructional program.
650. SEMINAR IN AREA OF SPECIALIZATION (1-10). May be repeated for credit not to exceed 10 hours. Provides an opportunity for advanced graduate students and professors to pursue cooperatively selected concepts and theoretical formulations.
652. CURRENT PROBLEMS AND ISSUES IN EDUCATIONAL ADMINISTRATION (4-5). The problems, issues and trends affecting educational institutions with particular attention to development of administrative procedures to cope with the extensive changes occurring in education.

660. ORGANIZATION AND ADMINISTRATION OF HIGHER EDUCATION (4-5). Pr., EDL 663 or 665. Theoretical and practical application of organizational, administrative, managerial and evaluation principles in academic affairs, student personnel services, business and administrative affairs. Includes the relationship between higher education and all levels of government.
661. FINANCING OF HIGHER EDUCATION (4-5). Theoretical bases for the use of taxation to support postsecondary education; student fees and tuition; financing and planning for higher education needs; cost benefit; budgeting and accounting; capital outlay; federal role in supporting higher education.
662. HIGHER EDUCATION LAW (4-5). Constitutional and statutory provisions for higher education and analysis of judicial decisions affecting postsecondary institutions of education.
663. THE AMERICAN COLLEGE AND UNIVERSITY (4-5). Mission, philosophy, history and social changes surrounding the functions of the Carnegie classification of colleges and universities. Topics include academic freedom, students, faculty, community relationships, international flow of educational ideas, government involvement and institutional advancement.
665. THE COMMUNITY COLLEGE (4-5). The rise and development of the community-junior college in American education; its history, philosophy and functions.
666. UNDERGRADUATE INSTRUCTION IN HIGHER EDUCATION (4-5). The development and selection of appropriate curricular materials and effective teaching strategies. Evaluation of instruction and learning effectiveness in undergraduate programs of higher education.
- The above courses (663, 665, 666), along with EDL 660, 669, CCP 653 and 654, constitute a core for the development of programs of study in higher education. Other offerings in both academic and professional fields are available for the completion of advanced programs. These include administration and supervision; foundations of education; psychology; student personnel; vocational and technical education; and professional and academic preparation for teaching in agricultural sciences, business administration, economics, sociology, English, health and physical education, history, home economics, mathematics, music, philosophy, physical and biological sciences, speech and sociology.
668. THE COMMUNITY COLLEGE PROGRAM (4-5). The program of the comprehensive community-junior college; designed to improve competencies in program planning, evaluation and administration.
669. STUDENT PERSONNEL WORK IN HIGHER EDUCATION (4-5). Theories, principles, practices, organization, administration and evaluation of student personnel services in higher education.
685. ADMINISTRATIVE ORGANIZATION AND BEHAVIOR (4-5). Current theories and concepts of formal organization, collective behavior and the social-psychological approach to organizations.
686. ADMINISTRATION AND POLICY FORMATION (4-5). Analysis of basic social forces, antecedent movements and political action leading to formal enactment of educational policy at national, state and local levels. Consideration is given to the roles and functions of governing and regulating boards and agencies.
695. PRACTICUM (1-15). Provides advanced students with experiences closely relating theory and practice, usually carried on simultaneously.
699. RESEARCH AND THESIS (CREDIT TO BE ARRANGED.) May be taken more than one quarter.
750. DOCTORAL SEMINAR IN EDUCATIONAL LEADERSHIP (2). Pr., admission to doctoral program. Provides students with experiences to unify their doctoral program. Thematic objectives help students develop critical reflective thinking skills and an ethical framework used in administrative decision-making.
798. FIELD PROJECT (CREDIT TO BE ARRANGED.) May be taken more than one quarter.
799. RESEARCH AND DISSERTATION (CREDIT TO BE ARRANGED.) May be taken more than one quarter.

COURSES FOR GRADUATE STUDENTS

600. TECHNOLOGY IN EDUCATION (4). Theory, problems, procedures and standards in the utilization of technology.
605. MODES OF MEDIATED INSTRUCTION (4). Pr., EM 600. Development and integration of media into learning prescriptions. Emphasis is on the assigning of media in a total systems approach to curriculum building.
610. SELECTION AND USAGE OF MEDIA FOR YOUTH (4). Pr., EM 510 or departmental approval. Evaluation, selection and use of print and non-print media for children and young adults, including materials for multicultural, special, gifted education.
620. PROGRAMS AND PRINCIPLES OF MEDIA SERVICES (4). Place and function of media services in school programs. Functions of school media personnel in leadership and principle application in media program development. Course work includes practicum experience.
625. INTERNSHIP (3-15). Supervised on-the-job experience in a school, college, or other appropriate setting. These experiences, accompanied by regularly scheduled on-campus discussion periods, provide evaluation and analysis of the intern experience.
626. PROBLEMS IN THE ADMINISTRATION OF MEDIA SERVICES (4). Current problems relating to an effective program of media services. Experiences include problem identification and resolution in the field.
630. COMMUNITY INFORMATION AND REFERENCE SOURCES (4). Pr., EM 530. The use of reference sources, information networks, community surveys and group decision-making in relating school media programs to the community.

640. ORGANIZATION AND ADMINISTRATION OF MEDIA CENTERS (4). Basic organization of books, non-book materials and services for effective use in media centers. Administering the budget, selection and purchase of materials, preparation of materials for use, circulation of materials, inventory, care and repair of materials and instruction in the use of media.
646. DIRECTED INDEPENDENT STUDY (1-10). Special study in which the student's learning efforts are guided toward desired objectives. Evaluation by professor and student of work accomplished at regular intervals.
650. SEMINAR IN EDUCATIONAL MEDIA (3-10). Pr., consent of department head. May be repeated for credit not to exceed 10 hours. Special problems formulated around student's area of specialization designed to engage students in an intensive study and analysis of problems identified.
651. RESEARCH IN EDUCATIONAL MEDIA (4). Pr., FED 661 and 18 hours of appropriate media courses. Review, analysis and interpretation of available research with emphasis on designing new research to meet the changing needs of the school.
654. EVALUATION OF MEDIA PROGRAMS (4). Pr., FED 661 and 18 hours of appropriate media courses. Intensive study of factors contributing to effective organizational configurations. Experiences include participation in evaluation of field programs.
670. COMPUTER-BASED EDUCATION: AUTHORING SYSTEMS (4). LEC. 3, LAB. 2. Pr., EM 600 or departmental approval. Design, development and implementation of computer-assisted instruction software.
671. COMPUTER-BASED INSTRUCTIONAL TECHNOLOGIES (4). Pr., graduate standing. Introduction to computer-based instructional technologies, those available in the present and the possibilities for the future. Gives the classroom teacher the cognitive and technical skills to incorporate computer-based technologies into the classroom. The identification of these skills is grounded in theory and research.
672. CURRENT AND EMERGING INSTRUCTIONAL TECHNOLOGIES (4). Pr., EM 671. Interactive technologies and their applications in education. Synthesizes the cognitive and technical skills introduced in EM 671 by the use of hypermedia, telecommunications and optical technologies.
673. CURRICULUM INTEGRATION OF TECHNOLOGY (4). Pr., EM 672. Learner competence in the integration of technology in the curriculum, including repurposing a videodisc, developing a computer movie lesson, planning and conducting an instructional event using distance technologies and writing a plan for use of computers for individuals and groups relating to an instruction theme/topic.
680. COMPUTER-BASED EDUCATION: PROGRAMMING SYSTEMS (4). Pr., EM 570 or departmental approval. Programming a microcomputer in the BASIC language with an emphasis on educational applications.
685. COMPUTER GRAPHICS FOR EDUCATIONAL APPLICATIONS (4). Pr., one basic course in computer applications or programming, departmental approval. Principles and processes for computer graphic production for educators developing problem-solving applications (initially for Apple II series computers).
690. MEDIA RESOURCES PLANNING AND PRESENTATIONS (4). LEC. 2, LAB. 4. Pr., departmental approval. Selecting, planning, preparing and presenting media resources, including access and selection, using materials and equipment, producing materials, planning presentations and validating uses of resources.
695. PRACTICUM (1-15). Experiences closely relating theory and practice, usually carried on simultaneously.
696. GRADUATE RESEARCH FORUM (1). May be repeated but counted only once toward graduation. Presentations by graduate students of research proposals and/or findings. Analysis of procedures and findings.
699. RESEARCH AND THESIS (CREDIT TO BE ARRANGED.) May be taken more than one quarter.
798. FIELD PROJECT (CREDIT TO BE ARRANGED.) May be taken more than one quarter.

FOUNDATIONS OF EDUCATION (FED)

213. HUMAN GROWTH AND DEVELOPMENT (5). LEC. 4, LAB. 2. Pr., sophomore standing. Teacher and the school in the direction, measurement and evaluation of individual growth and development by using various sociological, philosophical and psychological theories. Laboratory experiences required.
214. PSYCHOLOGICAL FOUNDATIONS OF EDUCATION (5). LEC. 4, LAB. 2. Pr., sophomore standing. The psychological dimensions of the educational process. The processes, conditions and evaluation of learning and related methodologies of teaching. Laboratory experiences and evaluation of the Pre-teaching Field Experience. For description of the Pre-teaching Field Experience Program, see Professional Requirements, Sect. C under College of Education.
270. INTRODUCTION TO STATISTICAL ANALYSIS IN THE HUMAN SCIENCES (3). LEC. 3. Pr., MH 140 or 160. The fundamentals of research design and analysis in nursing, education and related human sciences. Practical experience in the application of the binomial, normal curve, Poisson and Chi-square distribution functions in research design. Required in Professional Nursing Curriculum. Non-nursing students must have departmental approval.
300. EDUCATIONAL PSYCHOLOGY (5). LEC. 4, LAB. 2. Pr., sophomore standing. Learning and motivation from a developmental perspective for gaining insight into an understanding of the learning process and the individual involved in this process. Provides an integrated theoretical base for educational practice. Enrollment limited to education majors.
320. SOCIAL FOUNDATIONS OF EDUCATION (5). LEC. 4, LAB. 2. Pr., junior standing. Relationship of the school and contemporary society and the influence of cultural heterogeneity upon the teaching-learning process. Laboratory experiences focus on mastering basic tools for studying the school as a dynamic social system.
350. CULTURAL FOUNDATIONS OF EDUCATION (5). LEC. 4, LAB. 2. Pr., junior standing. Analysis of education giving emphasis to the act of teaching both in theory and practice. Regardless of disciplinary emphasis, the concerns of educational purpose, curriculum and pedagogy is the focus. Students will select one of the following disciplinary options: (a) philosophy of education, (b) history of education, (c) social foundations of education, (d) comparative education. Enrollment limited to education majors.

400. MEASUREMENT AND EVALUATION IN EDUCATION (5). LEC, 4, LAB. 2. Pr., FED 300 or equivalent and junior standing. Measurement and evaluation as an integral part of the teaching-learning process. Focus is on (a) identifying and defining intended learning outcomes, (b) constructing or selecting tests and other evaluation instruments that are relevant to specified outcomes and (c) interpreting and using results in determining attainment of educational goals and improving learning and instruction. Enrollment limited to education majors.
446. DIRECTED INDEPENDENT STUDY (1-10). The student's learning efforts are guided toward desired objectives. Includes evaluation by professor and student of work accomplished at regular intervals.
480. PHILOSOPHICAL FOUNDATIONS OF EDUCATION (5). Educational movements and ideas in Western culture which influence modern educational practices. Evaluation of laboratory experiences and the Professional Internship through philosophical analysis of educational concepts and problems.

ADVANCED UNDERGRADUATE AND GRADUATE

520. EDUCATIONAL SOCIOLOGY (4-5). Pr., SOC 201 or equivalent. The school as a social institution. Group interaction, formal and informal structure and organization and the relationship of education to other social institutions.
534. PERSONALITY DYNAMICS AND EFFECTIVE BEHAVIOR (4-5). Pr., 10 hours of psychology. Analysis of adaptive and maladaptive behavior. Not open to students majoring in psychology.

COURSES FOR GRADUATE STUDENTS

800. EDUCATION IN MODERN SOCIETY (4-5). Analysis and interpretation of the interaction of historical, philosophical and sociological considerations affecting education in modern society.
801. SOCIAL FOUNDATIONS OF EDUCATION (4-5). Analysis of man as a social being, his social relationships and inventions and value patterns. Direction and support of educational developments in relation to various socioeconomic structures.
810. MEASUREMENT AND EVALUATION OF THE INDIVIDUAL IN EDUCATION (4-5). Pr., FED 400 or departmental approval. An in-depth study of the principle and techniques of measurements and evaluation which are applicable to educational settings. Emphasis will be given to both the theoretical and the practical. Special problems and issues will also be examined.
815. FOUNDATIONS OF CLASSROOM MANAGEMENT (4-5). Analysis and comparison of various theories of classroom management.
817. ADVANCED EDUCATIONAL PSYCHOLOGY (4-5). Major psychological theories and research which have direct implications for educational practice. Topics include learning, the learner, individual differences, motivation, discipline, measurement and evaluation, with emphasis on the practical and the theoretical.
818. IMPLICATIONS OF LEARNING THEORY FOR EDUCATION (4-5). Pr., FED 300 or equivalent. Theories of learning, including the appropriate aspects of acquisition, transfer, motivation and retention, with comparative analysis of theories and educational implications.
819. EDUCATIONAL IMPLICATIONS OF HUMAN DEVELOPMENT (4-5). Pr., FED 300 or equivalent. A critical study of major concepts and principles of human development.
820. MOTIVATION TO LEARN (4). Pr., FED 617 or FED 618. Motivation theory and research related to education are considered along with new conceptualizations and directions. Enhancing motivation of learners, particularly in classrooms, is the focus.
834. HISTORY OF EDUCATION (4-5). An examination of the emergence of education as a formal institution, tracing its historical development from early Greek times to the present and emphasizing the historical antecedents which have helped to shape the role and functions of education in Western culture.
836. PHILOSOPHY OF EDUCATION IN AMERICA (4-5). Major American contributions to the philosophy of education and their influence on educational practice. Need for, and procedures in, re-examining concepts in light of recent scientific and cultural developments.
840. EDUCATIONAL PSYCHOLOGY (4-5). Psychology as it is applied in education. Central subject matter is the learner, the teacher and the teaching-learning process. Open only to students in the Fifth Year Programs.
841. CULTURAL FOUNDATIONS OF EDUCATION (4). An investigation of major contemporary issues influencing schooling in America, studied within a historical, philosophical and sociological context.
842. MEASUREMENT IN EDUCATION (4-5). Measurement, concepts and techniques appropriate for the design, implementation, analysis and interpretation of evaluating teaching and learning activities. Emphasis is on teacher-made evaluation procedures and evaluation of teaching effectiveness. Open only to Fifth Year Program students.
843. HISTORICAL FOUNDATIONS OF ELEMENTARY PEDAGOGY (4). History of the major contributions to pedagogical reform at the elementary level. Emphasis is given to intellectual history and particularly to those ideas that set precedent for contemporary methods. Open only to students in the Fifth-Year Program in Elementary Education.
845. CURRENT PROBLEMS AND ISSUES IN THE FOUNDATIONS OF EDUCATION (4-5). Pr., teaching experience. Interpretation of selected issues in the sociological, psychological, historical and philosophical foundations of education which affect the total educational enterprise and its relation to society.
846. DIRECTED INDEPENDENT STUDY (1-6). Special study in which the student's learning efforts are guided toward desired objectives. Include evaluation by professor and student at regular intervals.
847. FOUNDATIONS IN CURRICULUM AND INSTRUCTION (4-5). Introduction to principles and processes related to curricular and instructional development, designs and utilization. Emphasis on historical developments, problems in curricular organization and evaluation, forces affecting curriculum change and current issues and significant research that contribute to the general knowledge of curriculum and instruction.

650. SEMINAR IN FOUNDATIONS OF EDUCATION (3-10). May be repeated for credit not to exceed 10 hours. Consideration of historical, philosophical, social, psychological and research issues and their impact on education.
660. EDUCATION, RESEARCH AND PHILOSOPHY (4). An advanced study of fundamental elements of the idea of scientific research in education. The social, professional and intellectual elements of the systematic and experimental study of education will be the central topics.
661. RESEARCH AND EXPERIMENTATION IN EDUCATION (4-5). Emphasis given to research methods, design of experiments and evaluation; data sources, research planning elements of scientific method and proposal writing. Current trends in educational research.
663. THEORY AND METHODOLOGY OF QUALITATIVE RESEARCH (4-5). Pr., FED 661. An introduction to such naturalistic research approaches as ethnography, historiography, systematic observation and case study as they apply to educational theory and practice.
672. APPLIED EDUCATIONAL STATISTICS I (4-5). Pr., FED 661 and passing score on entry exam, including basic mathematical operations, elementary algebra and elementary knowledge of research terminology. An introduction to basic statistical concepts and their application to educational research problems. Topics include issues related to descriptive statistics and basic inferential statistics.
673. APPLIED EDUCATIONAL STATISTICS II (4-5). Pr., FED 672. Concepts and applications of analysis of variance and analysis of covariance as they relate to educational research issues.
702. SOCIAL CHANGE AND EDUCATIONAL DEVELOPMENT (4-5). Interpretive analysis of major current theories of social change and their practical application in improving the school and directing social innovations which sustain educational improvements.
703. SOCIAL AND CULTURAL DIVERSITY AND AMERICAN EDUCATION (4-5). An investigation of the educational responses to social and cultural pluralism in contemporary American society.
705. URBANIZATION AND EDUCATIONAL DEVELOPMENT (4-5). Developments in the concentration of population, wealth and cultural dissemination in urban areas. The changing character of this concentration and its impact on educational agencies regarding different population groups and different areas of educational service.
720. EDUCATIONAL IMPLICATIONS OF COGNITIVE DEVELOPMENT (4). Pr., FED 619. An investigation of classic and contemporary theory and research on cognitive development of children and their relationship to educational practice.
721. COGNITION AND INSTRUCTION (4). Pr., FED 618. Fundamental ideas from theory and research regarding cognition and learning will be explored. At the end of the course, students should have an understanding of the cognitive learning processes that represent the most up-to-date knowledge available. Students will also examine the theoretical implications of cognitive and learning theories in relation to instruction.
722. LEARNING AND INDIVIDUAL DIFFERENCES IN EDUCATION (4). Pr., FED 618. Fundamental ideas from theory and research regarding individual differences in mental ability, cognition and learning will be explored. Emphasis will be placed on the most up-to-date knowledge available. Students will also examine the theoretical implications of this research for the field of education.
737. DEVELOPMENT AND STATUS OF EDUCATIONAL PHILOSOPHY (4-5). Pr., FED 636 or consent of department head. Development of philosophy of education from the standpoint of its implications for educational practice. Several patterns of thought are considered including supernaturalism, idealism, realism, humanism, communism, existentialism and experimentalism.
739. COMPARATIVE EDUCATION (4-5). Pr., two quarters of graduate study or consent of department head. Comparative study of selected educational systems in nations in various stages of development. Special attention is given to American education in cross cultural contexts.
762. NONPARAMETRIC STATISTICAL ANALYSIS (4-5). Pr., FED 661. (Credit not allowed to meet minimum research requirements for doctoral students.) Common nonparametric statistical tests with emphasis on nominal and ordinal data; estimation and multisample designs; education applications and statistical models.
763. CATEGORICAL DATA ANALYSIS (4). Pr., FED 775. Theory and practice of categorical data analysis is developed by addressing topics such as log-linear models, configural frequency analysis and logistic regression.
775. MULTIVARIATE STATISTICAL ANALYSIS IN EDUCATIONAL RESEARCH I (4-5). Pr., FED 673. Concepts and educational applications of the general linear model as it relates to multiple regression analysis, trend analysis, discriminant analysis and canonical analysis.
776. MULTIVARIATE STATISTICAL ANALYSIS IN EDUCATIONAL RESEARCH II (4-5). Pr., FED 775. Concepts and educational applications of the general linear model as it relates to multivariate analysis of variance and Hotelling's T.
777. STRUCTURAL EQUATION MODELING (4). Pr., FED 776. Theory and practice of structural equation modeling techniques will be developed by expanding concepts of multiple linear regression and exploratory factor analysis to allow for correlated and causally related latent constructs.
780. EDUCATIONAL PROGRAM AND CURRICULUM EVALUATION (4-5). Pr., FED 610 and FED 661 or departmental approval. An intensive and critical study of various views of program and curriculum evaluation in education. Methods of evaluating programs will be examined, using available models and data gathering procedures.
782. TECHNIQUES OF SCALE CONSTRUCTION (4-5). Pr., FED 610 or PG 515 and FED 672 or departmental approval. The rationale and development of instruments to assess attitudes will be presented and the analysis of data from questionnaires, surveys and other scale types will be considered. Students will be required to design and conduct a preliminary validation of an attitude scale.
783. EVALUATION OF TEACHING (4). Topics include an examination of the theory and practice of teacher evaluation and development in the context of effective teaching. Emphasis will be placed on the practical application of clinical skills of teacher evaluation and development.

785. THEORY AND FUNCTION OF EDUCATIONAL MEASUREMENT (4-5). Pr., FED 610 and FED 673 or equivalents. Theory and statistical properties of test scores, classical test score theory and latent trait models. Emphasis is on the conceptual as well as the technological applications of test theory to education.
786. ITEM RESPONSE THEORY (4). Pr., FED 775 and FED 785. This course offers an examination of advanced measurement theory. Students will explore the various item response theory (IRT) models and their applications in measurement practice.
796. GRADUATE RESEARCH FORUM (1). May be repeated but counted only once toward graduation. Presentations by graduate students of research project and/or findings. Analysis of procedures and findings.
799. RESEARCH AND DISSERTATION (CREDIT TO BE ARRANGED.) May be taken more than one quarter.

Electrical Engineering (EE)

Professors Aldridge, Greene, Johnson, Owens, Rao, Rose, Shumpert, Tugnait and Tzeng
Earle C. Williams Eminent Scholar Irwin, *Head*
Alabama Power Distinguished Professor Grigsby
Square-D Professor Gross

Distinguished University Professor Jaeger
Alumni Professor Wu

Associate Professors M. Baginski, T. Baginski, Cressler, Ding, Hodel, Hung, Lee, Nelms,
Nelson, Reeves, Riggs, Roppel, Singh and Wentworth
Assistant Professors Denney, James, Kirkici

Non-engineering students may enroll only with departmental consent.

200. COMPUTER METHODS IN ELECTRICAL ENGINEERING (3). Coreq., EE 211. Introduction to computational techniques, such as high-level language programming, numerical integration, solution of linear systems of equations and the use of numerical software packages.
201. EE LABORATORY I (1). Coreq., EE 211. Electrical circuits and instrumentation. Measurement equipment and techniques, simple analog and digital circuit components; filtering and frequency response.
202. EE LABORATORY II (1). Pr., EE 201. Coreq., EE 221. Electrical instrumentation, sensing and communication.
203. EE LABORATORY III (1). Pr., EE 202, 212. Coreq., EE 222, 314. Electrical power systems and electromagnetic phenomenon. Design project integrating material from EE 201-203.
211. ELECTRIC CIRCUITS I (3). Pr., MH 163. Basic laws and concepts; resistive circuits; Laplace transforms and the solution of transient circuits, state variable analysis of circuits.
212. ELECTRIC CIRCUITS II (3). Pr., EE 211. Sinusoidal forcing functions and phasors; frequency response of networks; RMS values and complex power; magnetically-coupled circuits; three-phase circuits.
221. DIGITAL SYSTEMS (3). Pr., EE 200 or CSE 120. Binary numbers; boolean algebra, boolean functions, truth tables and Karnaugh maps; gates and flip-flops; combinational and sequential logic circuits; design methods and design verification; logic families and logic technologies.
222. COMPUTER SYSTEMS (3). Pr., EE 221. Microcomputer systems including system architecture, data representation, assembly language programming, input/outputs programming and interrupts.
- 304-305-306. EE LABORATORY IV-V-VI (1-1-1). Pr., EE 203. Junior-level laboratory setting to explore, learn and integrate concepts from several fundamental EE areas to contemporary engineering problems. Must be taken in sequence.
307. INTRODUCTION TO ELECTRICAL ENGINEERING I (3). Coreq., MH 265. Electrical circuit analysis - dc, ac and transient; power devices and systems.
308. INTRODUCTION TO ELECTRICAL ENGINEERING II (3). Pr., EE 307. Digital systems; electronic devices; amplifier concepts.
309. ENGINEERING INSTRUMENTATION (3). LEC. 2, LAB. 3. Pr., EE 263 or 307. Principles of instrumentation. The detection and measurement of physical quantities with emphasis on transducers, signal processing and display. (Not open to Electrical Engineering majors.)
311. PROBABILISTIC METHODS FOR ELECTRICAL ENGINEERS (3). Pr., EE 362. Introduction to probability, random variables and random processes, including analysis of random signals and noise and reliability of circuits and systems.
314. SIGNALS AND SYSTEMS I (3). Pr., EE 212, MH 265. Coreq., MH 266. Linear system modeling and analysis, superposition integral, impulse response, transfer function, stability, Fourier series, Fourier transform, Laplace transform, Bode plots, review of state variable modeling.
315. SIGNALS AND SYSTEMS II (3). Pr., EE 314. Discrete-time signals and systems, sampling, data reconstruction, Z-transform and applications, introduction to digital filter analysis and design, discrete Fourier transform, FFT applications.
331. ELECTROMAGNETICS I (3). Pr., EE 314. Transmission lines, transmission line techniques, fields and field operators, the electrostatic and magnetostatic fields.
332. ELECTROMAGNETICS II (3). Pr., EE 331. Time-varying fields, electrodynamics, plane waves, guided waves, radiation and antennas, transmission lines.
345. COMMUNICATION SYSTEMS (3). Pr., EE 311. Pulse code modulation, line coding, information rate, equalization, amplitude modulation, angle modulation.

350. CONTROL SYSTEMS (3). Pr., EE 315. Transfer function models, system response specifications, control system characteristics, PID control, root locus analysis and design, frequency response analysis and design.
362. LINEAR SYSTEMS (5). LEC. 4, LAB. 3. Pr., MH 266, EE 263, 264. Fourier series, Fourier transforms, Laplace transforms.
375. ELECTRONICS I (3). Pr., EE 212. Introduction to electronic devices and digital circuits, biasing and operation of diodes, rectification and regulation, biasing and operation of field-effect transistors and bipolar junction transistors in logic circuits.
376. ELECTRONICS II (3). Pr., EE 375, 314. Design and analysis of transistor amplifiers, biasing for linearity, frequency response, ideal and non-ideal operational amplifier circuits.
380. ELECTRIC POWER ENGINEERING (3). Pr., EE 212, 331. Introduction to the basic concepts in electrical power engineering.
- 401-402. SENIOR DESIGN PROJECTS (3-3). Pr., senior standing and departmental approval. A capstone design project which draws on the accumulated curricular experience. Particular project sections may have additional requisites. Must be taken in consecutive quarters. 401 will be graded S/U.
430. COMPUTER SYSTEM DESIGN (4). LEC. 3, LAB. 3. Pr., EE 335. Computer I/O, I/O hardware, programmed I/O, interrupts, DMA and I/O programming; microprocessors, support chips, peripherals and programming; system specification, design and verification.
452. DISCRETE AND NONLINEAR CONTROL SYSTEMS (4). LEC. 3, LAB. 3. Pr., EE 351. Analysis and design of discrete control systems, with emphasis on digital control systems; describing functions; state-plane analysis.
475. ELECTRONICS III (4). LEC. 3, LAB. 3. Pr., EE 374. Amplifier frequency response; multi-stage amplifiers; feedback, active filters; oscillators.
490. SPECIAL TOPICS (CREDIT TO BE ARRANGED.) Pr., departmental approval. May be taken more than one quarter.
498. HONORS THESIS (1-6). Pr., department head approval. Individual student endeavor consisting of directed research and writing of honors thesis. (EE Honors Program students only. May be repeated once for a maximum of six total credit hours.)
499. SPECIAL PROJECTS (CREDIT TO BE ARRANGED.) Pr., departmental approval. May be taken more than one quarter.

ADVANCED UNDERGRADUATE AND GRADUATE

523. ADVANCED DIGITAL CIRCUIT DESIGN (4). LEC. 3, LAB. 3. Pr., EE 430. Advanced design of digital logic circuits, using discrete gates and programmable logic devices, hardware description languages, circuit simulation for design verification and analysis, fault diagnosis and testing.
524. MICROPROCESSORS AND PERIPHERAL SUBSYSTEMS (3). Pr., EE 430 or departmental approval. Microcomputer chip sets, microcontrollers and bus standards. Design of selected peripheral subsystems, including graphics displays, floppy and hard disks and network interfaces.
530. COMPUTER ARCHITECTURE AND DESIGN (4). Pr., EE 430. Structural organization and hardware design of digital computers; register transfers; micro-operations, control units and timing; instruction set design; microprogramming; automated hardware design aids.
532. COMPUTER NETWORKS (3). Pr., EE 430 or CSE 405. Introduction to computer networks, the ISO layered network model, local and wide-area networks, applications and case studies. (Credit is not allowed for both EE 532 and CSE 532.)
533. PARALLEL PROCESSING (3). Pr., EE or CSE 530. Hardware and software elements of multiprocessors, multicomputers, pipeline and array machines and data flow architecture; design principles related to machine structures, control software and hardware, data storage and access, programming, languages and application algorithms. (Credit is not allowed for both EE 533 and CSE 533.)
534. NEURAL NETWORKS I (3). Pr., EE 430 or equivalent. Overview of neural network computing; evolution of development in neural computing; Perceptrons, Adaline and Madaline; Hopfield net and bi-directional associative memory; backpropagation net; Boltzmann and Cauchy machines; self-organizing feature maps; counterpropagation net; adaptive resonance theories; implementations.
547. INTRODUCTION TO DIGITAL SIGNAL PROCESSING (3). Pr., EE 340. Digital processing of signals, difference equations, discrete-time Fourier transforms, discrete and fast Fourier transforms, applications of digital processing.
548. INTRODUCTION TO DIGITAL IMAGE PROCESSING (3). Pr., EE 311, 362. Basics of digital image processing and surveys of applications such as enhancement, restoration and compression.
551. DESIGN OF DIGITAL COMPUTER SIMULATIONS OF PHYSICAL SYSTEMS (3). Pr., EE 452. Digital computer simulation of physical systems; optimization techniques for design; parameter variation to meet design objectives.
552. MODERN DIGITAL CONTROL SYSTEMS DESIGN (3). Pr., EE 452. Linear algebra, state variable modeling, pole assignment design, optimal design, design of state estimators.
553. MICROPROCESSOR CONTROL SYSTEMS DESIGN (3). Pr., EE 430, Coreq., EE 452. Electrical transducers. Characteristics of operational amplifiers used for instrumentation. Signal conditioning operations. Data conversion systems. Signal transmission methods. Process controllers. Microprocessor controller examples.
554. LINEAR SYSTEMS WITH RANDOM SIGNAL INPUTS (3). Pr., EE 311, Coreq. EE 452. Review of probability and random variables, random signals, analog and discrete system response to random signals Monte Carlo simulations.

570. PHYSICAL ELECTRONICS I (3). Pr., EE 291, PS 320. Electrical properties of materials with emphasis on semiconductors.
571. PHYSICAL ELECTRONICS II (3). Pr., EE 570. Physical properties of electrical and electronic devices.
572. MICROELECTRONICS — FABRICATION AND DESIGN (4). LEC. 3, LAB. 3. Pr., EE 374. Introduction to monolithic integrated circuit technology. Bipolar and MOSFET processes and structures. Elements of layout, design, fabrication and applications. Experiments in microelectronic technologies.
573. HYBRID ELECTRONIC DESIGN (4). LEC. 3, LAB. 3. Pr., EE 374 or departmental approval. Technology and design of thick and thin film hybrids for implementations of circuit schematics. Techniques are demonstrated in the laboratory and a functional circuit is designed, fabricated and tested.
574. INTRODUCTION TO OPTOELECTRONICS (3). Pr., EE 392. Optical propagation modes: fiberoptics, lasers, electro-optic modulation, detectors and noise in optical systems.
575. ANALOG ELECTRONIC DESIGN (3). Pr., EE 475 and departmental approval. Design of analog integrated circuits; current sources, differential amplifiers, output stages, operational amplifiers, frequency response. Nonlinear circuits: multipliers and phase-locked loops.
576. INTRODUCTION TO VLSI DESIGN (3). Pr., EE 330, 371. The design of digital logic circuits and systems in very large scale integrated circuit (VLSI) technology; bipolar and MOS logic families; full custom and semicustom CMOS design methodologies.
579. INTRODUCTION TO PLASMA ENGINEERING (3). Pr., EE 291 or departmental approval. Electrical breakdown and discharges in gases, basic plasma theories, gas lasers, plasma processing of materials, controlled fusion, plasma switches, microwave generation.
581. APPLICATIONS AND DESIGN OF ELECTROMECHANICAL SYSTEMS (3). Pr., EE 383 or departmental approval. Transformer connections. NEMA and IEEE Motor Standards. Matching motors to cyclic loads. Machine transient analysis.
582. APPLICATION AND DESIGN OF POWER ELECTRONIC SYSTEMS (3). Pr., EE 383 or departmental approval. Polyphase power rectifiers and inverters. Solid state drives for rotating machines. Characteristics of high power solid state components.
583. ELECTRICAL INSULATION DESIGN (3). Pr., EE 392. Design of insulation for all engineering applications. Includes vacuum, gaseous, liquid and solid insulations. Coordinated homework design projects and classroom demonstrations and presentations.
585. POWER SYSTEM PROTECTION (3). Pr., EE 383 or departmental approval. Symmetrical components and analysis of unbalanced faults on power systems. Relay and protection schemes.
587. CONTROL OF POWER SYSTEMS (3). Pr., EE 383 or departmental approval. P-f control loop, automatic generation control, economic dispatch, transmission losses, reserve allocation, decoupled power flow, matrix inversion Lemma, Q-V control.
589. POWER DISTRIBUTION SYSTEMS (3). Pr., EE 383. Addresses issues of engineering relevance in the design and operation of electric power distribution systems, including radial and loop networks, system protection, power quality, common transformer connections, metering, grounding and instrumentation.
590. SPECIAL TOPICS (CREDIT TO BE ARRANGED.) Pr., departmental approval. May be taken more than one quarter.
593. INTRODUCTION TO ELECTROMAGNETIC COMPATIBILITY AND INTERFERENCE (3). Pr., EE 362, 371, 392. Electrical noise suppression and control in electrical systems.
594. RADAR SYSTEMS (3). Pr., EE 340, 392. Introduction to the fundamentals of radar systems.
595. MICROWAVE ENGINEERING (3). Pr., MH 266, EE 393. Application of Maxwell's equations to practical devices; microwave network analysis and microwave sources; demonstration of microwave devices and test methods; design and analysis filters, couplers and amplifiers utilizing modern microwave computer-aided design software.
596. DESIGN OF ANTENNAS AND ANTENNA SYSTEMS (3). Pr., MH 266, EE 393. Design of antenna elements and phased arrays of these elements, antenna system performance parameters and guidelines, antenna measurements and measurement systems.

COURSES FOR GRADUATE STUDENTS

601. LINEAR ANALYSIS (5). Methods of analysis; the exponential forcing function. Fourier series, Fourier transform, Laplace transform and superposition integrals, Complex variables and contour integration.
602. NONDETERMINISTIC SYSTEMS ANALYSIS (3). Pr., departmental approval. Applications of probability, random variables and stochastic processes in electrical engineering.
603. ANALYSIS OF LARGE-SCALE ELECTRIC NETWORKS (3). Pr., EE 362 or departmental approval. Fundamentals of linear graph theory and their application to steady-state and dynamic analysis of large-scale electric networks. Computer solutions emphasized.
- 610-611. ADVANCED ELECTROMAGNETIC THEORY I-II (3-3). Pr., departmental approval. Two-course sequence for students specializing in electromagnetics.
- 614-615. NUMERICAL METHODS IN APPLIED ELECTROMAGNETICS I-II (3-3). Two-course sequence for students specializing in electromagnetics.
618. MONOLITHIC MICROWAVE INTEGRATED CIRCUIT DESIGN (3). Pr., EE 393, EE 475. Technology, design and analysis of monolithic microwave integrated circuits; passive and active microwave circuit elements; high frequency substrates. Individual design projects will utilize modern computer-aided design software.
621. SWITCHING THEORY (4). Pr., EE 330 or equivalent. Topics in switching theory and digital design. Multiple level circuits, decomposition, threshold and multi-valued logic, linear sequential circuits and issues in asynchronous sequential circuit design.

630. ADVANCED COMPUTER ARCHITECTURE (3). Pr., EE 530 or departmental approval. Computer architecture and design principles; computer structures, partitioning, pipelining; vector processing; performance modeling; case studies.
631. CURRENT TOPICS IN COMPUTER ARCHITECTURE (3). Pr., EE 530 or equivalent. Topics in computer architecture, with emphasis varying according to current research interests. May be taken more than one quarter.
632. DESIGN AND ANALYSIS OF COMPUTER NETWORKS (3). Pr., EE 352 or departmental approval. Layered communication architectures, including ISO, ISDN, SNA and X.25. Performance evaluation of communication networks and systems using queueing theory. Design and analysis of packet switching and circuit switching networks.
633. THEORY OF CONCURRENT SYSTEMS (3). Pr., EE 533 or departmental approval. Theoretical approaches to the formal specification of concurrency. Applications to the design of distributed and concurrent computer systems.
634. NEURAL NETWORKS II (3). Pr., EE 534 or equivalent. Advanced topics in neural networks, including neural dynamics of vision, sensory-motor control (robotics), speech recognition, adaptive pattern recognition, self-organization, electronic and optical implementations and neural architectures.
635. FAULT-TOLERANT COMPUTING (4). Pr., EE 530 or equivalent or departmental approval. Architecture and design of fault-tolerant computer systems using protective redundancy, estimation of the reliability and availability of fault-tolerant systems, error recovery and fault diagnosis.
640. STATISTICAL SIGNAL PROCESSING (3). Pr., departmental approval. Fundamentals of processing of signals based upon their statistical behavior; Wiener and Kalman filters with applications; linear predictor and its various implementations and applications; eigendecomposition based high-resolution algorithms for array processing and harmonic retrieval.
641. SPECTRAL ESTIMATION AND SYSTEM IDENTIFICATION (3). Pr., EE 602. Elements of parameter estimation theory; nonparametric spectral estimation; periodogram and spectral windows; parametric approaches; AR, MA, ARMA and state space modeling of time series, maximum-likelihood parameter estimation, model order selection; applications; higher order spectral analysis; non-parametric and parametric approaches.
642. ADAPTIVE SIGNAL PROCESSING (3). Pr., departmental approval. Least mean square and recursive least square algorithms; adaptive FIR and IIR filters, lattice filters, Kalman filters; adaptive system identification and its application in communications and control.
643. DIGITAL FILTERS (3). Pr., EE 547. Comprehensive treatment of the theory, design and application of digital filters in digital signal processing.
644. DETECTION AND ESTIMATION THEORY (3). Pr., EE 602 or 640, departmental approval. Decision theory concepts; Bayesian, maximum likelihood, minimax and Neyman-Pearson approaches to hypothesis testing; detection of deterministic and random signals in noise; parameter estimation; Bayesian and maximum likelihood approaches, non-random and random parameter estimation; signal estimation.
645. ADVANCED COMMUNICATION THEORY (3). Pr., EE 341. Principles of modern communication systems. Elements of information theory, source encoding, efficient signaling with coded waveforms, convolutional codes; carrier recovery and synchronization under AGN channel; adaptive equalization; maximum likelihood estimation, Viterbi algorithm.
646. PATTERN RECOGNITION (3). Pr., EE 547, EE 602. Decision functions, distance measures and clustering. Bayes and minimax pattern classifiers, preprocessing and feature extraction, syntactic pattern recognizers, survey of applications.
647. DIGITAL IMAGE PROCESSING (3). Pr., EE 547. Fundamentals of digital image processing. Topics include image compression, enhancement, restoration and coding. Includes computer solutions.
650. STATE-VARIABLE ANALYSIS OF SYSTEMS (3). Pr., departmental approval. Matrices and linear spaces; state variables for linear continuous systems; applications in analysis and design of control systems.
651. SIMULATION OF DYNAMIC PHYSICAL SYSTEMS (3). Pr., EE 351. Simulation of dynamic physical systems by analog, digital and hybrid computers, control system design by simulation, optimization techniques, advanced topics.
652. ADVANCED DIGITAL CONTROL (3). Pr., departmental approval. Advanced state modeling, pole assignment, state estimations, MIMO, sampling theory.
653. CONTROL SYSTEM SENSOR INTERFACING TO COMPUTERS (2). LAB. 6. Pr., EE 430. Coreq., EE 553. Transducers, signal conditioning, analog-to-digital and digital-to-analog conversion. Effects of noise problems, linearization and quantization.
654. STOCHASTIC CONTROL SYSTEMS I (3). Pr., departmental approval. Review of probability and random variables, random signals, analog and discrete system response to random signals, Monte Carlo simulations, Kalman filtering project.
655. OPTIMAL CONTROL SYSTEMS (3). Pr., departmental approval. Theory of extrema, calculus of variations, LQR theory, optimal control, observability, controllability, sensitivity, observers, pole assignments.
656. NON-LINEAR SYSTEMS (3). Pr., EE 550 or departmental approval. Phase plane analysis, Lyapunov methods, frequency domain approximations, feedback linearization. Systems of variable structure.
660. ADVANCED BIPOLAR DEVICES (3). Pr., EE 571 or departmental approval. Advanced physical theory of pn junctions and bipolar junction transistors, modeling theory, high level injection effects, large signal analysis and second order effects.
661. ADVANCED UNIPOLAR DEVICES (3). Pr., departmental approval. Advanced theory of field effect devices,

662. COMPOUND SEMICONDUCTOR ELECTRONICS (3). Pr., departmental approval. Compound semiconductor materials properties; heterojunction structures and bandgap engineering, metal-semiconductor interfaces, two-dimensional electron gas, compound semiconductor devices; compound semiconductor circuits, IC fabrication.
663. MICROELECTRONIC SENSORS (3). Pr., EE 475 or departmental approval. Theory, technology and design of micromechanical sensors, chemi-electronic microsensors, photodetectors, superconductor-based detectors and associated devices.
665. LOW-TEMPERATURE ELECTRONICS I (3). Pr., departmental approval. First of a two-part sequence examining the physical understanding and design of semiconductor electronics for operation at cryogenic temperatures (4K-300K). Motivation for the cooling of electronics, fundamental concepts of temperature, semiconductor properties at reduced temperatures, carrier freeze-out, temperature dependence of CMOS device and circuit properties, applications.
666. LOW-TEMPERATURE ELECTRONICS II (3). Pr., EE 685 or departmental approval. Second of a two-part sequence examining the physical understanding and design of electronics for operation at cryogenic temperatures (4K-300K). Temperature dependence of bipolar device and circuit properties, cryogenic operation of the SiGe HBT, III-V HBT, MODFET, resonant tunneling devices, Josephson junction technology, high Tc superconductors, cryocooler technology, packaging issues.
668. ELECTRONIC PACKAGING (3). Pr., EE 475 or departmental approval. Design and analysis of system and component packaging. Emphasis on electrical, thermal and mechanical considerations and material and manufacturing issues.
669. ADVANCE PLASMA PROCESSING OF ELECTRONIC MATERIALS (3). Pr., departmental approval. Analysis, design and application of DC, RF and microwave plasmas in microelectronic materials processing, sputtering, etching, deposition, surface modification; diagnostic and characterization techniques.
675. ANALOG INTEGRATED CIRCUIT DESIGN (3). Pr., EE 475 or departmental approval. Bipolar and MOS integrated circuit technology and design including circuit design, simulation and layout.
676. DIGITAL INTEGRATED CIRCUIT DESIGN (3). Pr., departmental approval. Analysis, design simulation and layout of digital integrated circuits; solid-state switching device behavior; design of logic gates, static and dynamic memory and registers; and testability. Each student will be responsible for the design of a gate array or equivalent chip along with logic circuit templates and performance data.
683. POWER SYSTEM TRANSIENTS (3). Pr., departmental approval. Derivation of line parameters, including ground effects and overhead neutrals and components. Line performance including lightning and switching transients. Surge arrester applications.
684. POWER SYSTEM STABILITY (3). Pr., departmental approval. Definitions of steady state, dynamic and transient stability. H. constants. The swing equation. Synchronous models. Multi-machine systems.
686. ADVANCED ENERGY CONVERSION (3). Pr., EE 383, 291, ME 301, departmental approval. Alternative methods of generating electric energy. Analysis and design of advanced energy conversion systems.
687. POWER SYSTEM OPERATIONS AND CONTROL (3). Pr., EE 383 or departmental approval. Advanced power flow analysis techniques, dispatch of power and energy, control of power system frequency and voltage.
688. POWER SYSTEM PLANNING AND RELIABILITY (3). Pr., EE 383 or departmental approval. Analysis of the reliability of power system generation, transmission and distribution facilities and the use of reliability measures in the planning of power system expansions.
690. SPECIAL TOPICS (CREDIT TO BE ARRANGED.) Pr., departmental approval. May be taken more than one quarter.
692. DIRECTED READING IN ELECTRICAL ENGINEERING (CREDIT TO BE ARRANGED.)
695. SEMINAR. (CREDIT TO BE ARRANGED.) May be taken more than one quarter.
698. SPECIAL PROJECTS (CREDIT TO BE ARRANGED.) Pr., departmental approval. May be taken more than one quarter.
699. RESEARCH AND THESIS (CREDIT TO BE ARRANGED.) May be taken more than one quarter.
743. COMMUNICATION SYSTEMS (3). Pr., departmental approval. RF circuitry, impedance matching networks, oscillators, mixers, modulators, detectors, RF amplifiers, high frequency devices, integrated subsystems, testing and measuring techniques in RF systems.
747. THEORY OF DIGITAL SIGNAL PROCESSING (3). Pr., EE 547. Finite and infinite impulse response digital filters, finite word length effects, two-dimensional signal processing hardware schemes and applications.
755. MODERN CONTROL THEORY APPLICATIONS (3). Pr., departmental approval. Application and practice of modern analysis methods, design techniques and technologies to advanced engineering control problems. Includes linear and non-linear state variable methods, adaptive control, estimation theory, signal processing and numerical methods. May be taken more than one quarter.
756. NONLINEAR CONTROL SYSTEMS (3). Pr., departmental approval. State-plane; describing functions; Lyapunov methods.
773. ADVANCED FABRICATION PROCESSES AND LABORATORY (4). LEC. 3, LAB. 3, Pr., EE 672 or departmental approval. Physics of semiconductor processing: vacuum technology, diffusion, implantation, photolithography. Design and fabrication of polysilicon self-aligned gate arrays and advanced bipolar devices. Process control defect distribution, statistical yield analysis, quality control and reliability considerations.
774. QUANTUM ELECTRONICS (3). Pr., EE 674, PS 643. Quantized electromagnetic field, interaction of radiation and atomic systems, laser oscillation, semiconductor lasers, parametric amplification, phase conjugate optics.

- 775. ADVANCED TOPICS IN ELECTRONIC CIRCUIT DESIGN (3). Pr., departmental approval. Material will be chosen from recent advances in electronic circuit design. May be taken more than one quarter.
- 776. VLSI DESIGN (3). Pr., EE 676 or departmental approval. May be taken more than once for credit. Course will normally span at least two quarters. Analysis, design, simulation, and layout of very large scale integrated circuits, comparison of logic families, design for testability, design tools including SPICE, RNL, VHDL, MAGIC, etc., group projects include the complete design of a VLSI circuit.
- 781. GENERALIZED MACHINE THEORY (3). Pr., departmental approval. Linear coordinate transformations. The generalized machine. Dynamic and steady state performance.
- 787. POWER SYSTEM OPERATIONS (3). Pr., EE 587 or departmental approval. State estimation, observability, contingency screening, optimal power flow, short-term load forecast, unit commitment.
- 790. SPECIAL TOPICS (CREDIT TO BE ARRANGED.) Pr., departmental approval. May be taken more than one quarter.
- 792. DIRECTED READING IN ELECTRICAL ENGINEERING (CREDIT TO BE ARRANGED.)
- 795. SEMINAR. (CREDIT TO BE ARRANGED.) May be taken more than one quarter.
- 799. RESEARCH AND DISSERTATION. (CREDIT TO BE ARRANGED.) May be taken more than one quarter.

Engineering (EGR)

General Curriculum (CLA) students (those with undeclared majors) may enroll only with departmental consent. For other engineering courses, refer to individual departmental course offerings.

- 172. GRAPHICAL COMMUNICATION & DESIGN (3). LEC. 2. LAB. 3. Graphical concepts and projective geometry relating to spatial visualization and communication in design, including technical sketching, instrument drawing and computer-aided drafting and design.
- 201. THERMODYNAMICS I (3). Pr., CH 103, MH 163, PS 220, 221 or CH 210. Laws of thermodynamics; energy transformations; properties and relationships among properties; equations of state and simple processes and cycles.
- 205. ENGINEERING MECHANICS—STATICS (3). Pr., PS 220, CSE 120. Coreq., MH 264. Basic principles of vectors, forces, moments and free body diagrams. Force systems and equilibrium in two and three dimensions friction.
- 207. MECHANICS OF MATERIALS (3). Pr., EGR 205, MH 264. Coreq., MH 265. Fundamental concepts of stress and strain; transformations; stress-strain relationships; applications to uniaxially loaded members; centroids and area moments of inertia; torsion; normal stresses in beams.
- 210. FUNDAMENTALS OF ENGINEERING MECHANICS (3). Pr., PS 220. Coreq., MH 264. Basic principles of two-dimensional force systems, free body diagrams, concepts of stress and strain, centroids of composite areas, kinematics and kinetics of particles and rigid bodies.
- 220. INTRODUCTION TO THERMODYNAMICS, FLUIDS AND HEAT TRANSFER (3). LEC. 2, LAB. 3. Pr., CH 103, PS 221, MH 265, EGR 210. Principles of thermodynamics, fluids and heat transfer.
- 235. DYNAMICS (3). Pr., EGR 205. Coreq., MH 265. Newtonian approach to the analysis of two dimensional motion of particles and rigid bodies. Work-energy and impulse-momentum principles are applied to particle motion.
- 420. PROFESSIONAL PRACTICE IN ENGINEERING (1). LEC. 1. (S/U graded.) Pr., upper division standing. Professional engineering attitudes, ethics and social responsibilities.
- 450. ENGINEERING HONORS SEMINAR (3). Pr., junior standing. Topics of interest to honors students and engineering faculty. Interaction with successful engineering alumni. Open to Honors Program students only.
- 491. LEGAL ASPECTS OF ENGINEERING, ARCHITECTURE AND DESIGN (3). Legal aspects of engineering and design; an introduction to the American legal system with emphasis on problems of the engineering and design professions.

English (EH)

Professors Rygiel, *Head*, Backscheider, Cunningham, Gresham, Hitchcock, Jacobson, Latimer, Morrow, Solomon and Welt

Associate Professors Bernstein, J. Clark, M. Clark, Crandell, Downes, Dunlop, Dykstal, Goldstein, Hammersmith, Haney, Kouidis, Morton, Nunnally, Relihan, Sabino, Silverstein, I. Thompson, Troy, Walters and Wehrs

Assistant Professors Appelbaum, Atkinson, Burnham, McKelly, Morlier, Rothschild, Smith and St. John

Adjunct Assistant Professor Flick

Visiting Associate Professor Kaetz

Instructors Abram, Beyers, Bolton, Caton, Guernsey, Hagerty, McClelland, Parker, Schuyler, H. Thompson, Wadenpohl and Waters

Freshman English Composition (110 or 118) and Great Books (220-221 or 281-282) are required of all students and are prerequisites for all courses in English numbered 400 or above.

Most 300- through 500-level five-hour EH courses are offered in alternate years rather than annually. An annual schedule of course offerings is available in the English Department office.

I. GENERAL CURRICULUM COURSES

- 080. PROFICIENCY IN ENGLISH FOR FOREIGN STUDENTS (NO CREDIT).
- 100. BASIC ENGLISH (NO CREDIT). English grammar and mechanics and fundamentals of composition. Recommended for students with poor composition backgrounds or for students whose ACT or SAT verbal scores are low.
- 110. ENGLISH COMPOSITION (5). Intensive study of and practice in effective expository and argumentative writing.
- 118. HONORS WRITING SEMINAR (5). Pr., approval by the University Honors Program. Fall, Winter. Topics in writing for students in Honors.
- 180. PROFICIENCY IN ENGLISH FOR FOREIGN STUDENTS (1).
- 182. COMMUNICATION SKILLS FOR INTERNATIONAL TEACHING ASSISTANTS (5). Pr., graduate standing. Provides oral language skills required for effective classroom communication.
- 190. RESEARCH, THESIS AND DISSERTATION WRITING FOR INTERNATIONAL GRADUATE STUDENTS (5). Pr., graduate standing. Emphasis on skills that international graduate students need to undertake successful research writing in English.
- 220-221. GREAT BOOKS I, II (5-5). Pr., EH 110 or 118 and sophomore standing or approval by the English Department; EH 220 pr. for 221. Significant texts in Western civilization: EH 220, ancient Greece through the Renaissance; EH 221, 17th century to the present.
- 281-282. HONORS GREAT BOOKS I, II (5-5). Pr., EH 118 or equivalent and approval by the University Honors Program; EH 281 pr. for 282. Significant texts in Western civilization: EH 281, ancient Greece through the Renaissance; EH 282, 17th century to the present.

II. ENGLISH LITERATURE

- 353-354. SURVEY OF ENGLISH LITERATURE (5-5). English literature from *Beowulf* to the present.
- 405. CHAUCER (5). The major works of Chaucer in Middle English.
- 450. MODERN BRITISH LITERATURE (5). British poetry and prose, 1910-1945.
- 452. CONTEMPORARY BRITISH LITERATURE (5). British poetry and prose, 1945-present.
- 461. ENGLISH DRAMA, BEGINNINGS TO 1642 (5).
- 462. POETRY AND PROSE OF THE ENGLISH RENAISSANCE, 1475-1603 (5).
- 463. RESTORATION AND NEO-CLASSICAL LITERATURE, 1660-1745 (5).
- 464. THE AGE OF JOHNSON, 1745-1798 (5). Poetry, prose and drama.
- 465. MILTON (5).
- 466. POETRY AND PROSE OF THE 17TH CENTURY (5). Non-dramatic British literature, 1603-1660.
- 469. 18TH-CENTURY ENGLISH NOVEL (5).
- 470. EARLY SHAKESPEARE (5). The Comedies, Histories and Early Tragedies.
- 471. LATER SHAKESPEARE (5). Tragedies, Dark Comedies and Romances.
- 474. 19TH-CENTURY ENGLISH NOVEL (5).
- 475. ROMANTIC LITERATURE, 1790-1830 (5). Poetry and prose from Wordsworth through Keats.
- 477. VICTORIAN LITERATURE, 1830-1890 (5). The major poets and nonfiction writers from 1830 to 1890.

III. AMERICAN LITERATURE

- 370. SURVEY OF AMERICAN LITERATURE (5). American literature from the beginnings to the present.
- 425. THE SHORT STORY (5). Development of the short story in America and Europe from the early 19th century to the present.
- 440. EARLY AMERICAN LITERATURE (5). American literature to 1800.
- 441. AMERICAN ROMANTICISM (5). 19th-century American literature, to approximately 1865.
- 442. AMERICAN REALISM AND NATURALISM (5). American literature of the later 19th and early 20th centuries.
- 443. MODERN AMERICAN LITERATURE (5). American poetry and prose, 1914-1945.
- 444. CONTEMPORARY AMERICAN LITERATURE (5). American poetry and prose, 1945-present.
- 472. THE AMERICAN NOVEL (5).
- 473. AMERICAN POETRY (5). Major American poets from the colonial period to the present.
- 495. SOUTHERN LITERATURE (5). The poetry, fiction and nonfiction prose writings in the South from Revolutionary times to the present, with major emphasis centering on Southern regional attitudes and trends.
- 496. AFRICAN-AMERICAN LITERATURE (5).

IV. LITERATURE IN TRANSLATION

- 406. MEDIEVAL LITERATURE IN TRANSLATION (5). Topics in English and Continental medieval literature, including such writers as St. Augustine, Guillaume de Lorris, Marie de France, Andreas Capellanus, Chretien de Troyes, Dante, Margery Kempe and Malory.
- 412. THE EUROPEAN NOVEL (5). The reading and analysis of significant novels by major European writers.
- 430. THE CLASSICAL BACKGROUND (5). Readings from the major Greek and Roman writers. The texts are chosen with particular attention to their subsequent influence upon English and American literature.
- 434. MODERN DRAMA (5). American, English and world drama from Ibsen through World War II.

- 435. CONTEMPORARY DRAMA (5). American, English and world drama of the post-World War II era.
- 490. STUDIES IN COMPARATIVE LITERATURE (5). Non-British and non-American literature written in English or studied in translation. May be repeated once for credit with the department's approval.

V. LANGUAGE AND CRITICISM

- 403. INTERPRETING TEXTS (5). Theory and practice of interpreting literary and non-literary texts.
- 409. CLASSICAL RHETORIC (5). Classical rhetorical theory from ancient Greece to St. Augustine.
- 410. CONTEMPORARY RHETORIC (5). The principles of rhetorical analysis and of modern stylistics with practical application of those principles to varied types of literary materials.
- 411. INTRODUCTION TO LINGUISTICS (5). The system and structure of language, with emphasis on modern American English sounds, words, syntax and semantics, along with developments in such areas as language acquisition, language contact and language variation and change.
- 414. LANGUAGE VARIATION (5). Social, regional and contextual forces that contribute to dialect diversity.
- 417. DISCOURSE ANALYSIS (5). Theory and application of discourse analysis.
- 481. TOPICS IN CRITICAL THEORY (5). Pr., EH 403.
- 499. SENIOR SEMINAR (5). Pr., EH 400, 404 or 408; EH 403 and 411, senior standing. EH major. Research seminar on a significant topic in literature and/or language.
- 541. HISTORY OF THE ENGLISH LANGUAGE (5). The chronological development of the English language.
- 594. MODERN ENGLISH GRAMMARS (5). Pr., EH 411 or equivalent. Examination of several grammatical theories, with emphasis on English syntax.

VI. WRITING COURSES

Freshman English Composition (110 or 118) and Great Books (220-221 or 281-282) are required of all students and are prerequisites for English courses numbered 400 or above.

- 400. ADVANCED COMPOSITION (5). Pr., junior standing. Theory and practice of expository writing.
- 404. TECHNICAL WRITING (5). Pr., junior standing. Writing for students in engineering, scientific and technical fields, with emphasis on reports and correspondence in their professions. Credit for EH 408 precludes credit for this course.
- 408. BUSINESS WRITING (5). Pr., junior standing. Writing for students in all majors in the College of Business, as well as other majors with business management or governmental service components. Emphasis on reports and correspondence in their professions. Credit for EH 404 precludes credit for this course.
- 416. TECHNICAL AND PROFESSIONAL EDITING (5). Pr., EH 400, 404, 408, or departmental approval, junior standing. Editing technical and professional documents for organization, format, style and mechanics. Helps students develop professional competence as editors.
- 420. INTRODUCTORY FICTION WRITING (5).
- 421. ADVANCED FICTION WRITING (5). Pr., EH 420.
- 427. INTRODUCTORY POETRY WRITING (5).
- 428. ADVANCED POETRY WRITING (5). Pr., EH 427.
- 429. SPECIAL PROJECT IN CREATIVE WRITING (5). Pr., EH 420 or 427. Extensive writing in varying literary genres, the specific kind of writing to be announced each time the course is offered. May be repeated once for credit, with department's consent.
- 487. ADVANCED HONORS WRITING SEMINAR (5). Pr., junior standing and approval by the Honors Program. Theory and practice of expository writing.
- 501. ADVANCED PROFESSIONAL WRITING (5). Pr., departmental approval. Document design, readability, graphics, audience analysis in advanced professional and technical writing tasks.
- 502. PRACTICUM IN PROFESSIONAL WRITING (5). Pr., departmental approval. Supervised experience in editing technical, business and scientific documents.
- 503. TOPICS IN TECHNICAL AND PROFESSIONAL WRITING (5). Pr., EH 404, 408 or 416. May be repeated once for credit with department's consent.

VII. COURSES ON SPECIAL TOPICS

- 212. UNDERSTANDING POETRY (5). Conventions of reading and writing about poetry.
- 214. UNDERSTANDING FICTION (5). Approaches to reading and writing about fiction.
- 214. UNDERSTANDING DRAMA (5). Approaches to reading and writing about drama.
- 319. STUDIES IN CHILDREN'S LITERATURE (5).
- 335. CLASSICAL MYTHOLOGY (5). The character and influence of Greek and Roman mythology.
- 384. LITERATURE AND CULTURE (5).
- 387. WORLD ENGLISH LITERATURES (5). Non-British and non-American literature written in English.
- 426. POPULAR GENRES (5). Explores one or more of the genres represented in the literature of past and present popular cultures.
- 454. TOPICS IN LANGUAGE AND LITERATURE (5). Concentrated investigation of varying topics in language and literature. May be repeated once for credit with department's approval.

478. DIRECTED READINGS (5). Pr., junior standing with a minimum of 3.0 overall average, a 3.5 average in at least five upper-division English courses and the consent of the English Department. Readings in a specific area of literature or language. May be repeated once for credit with department's approval.
483. TOPICS IN GENDER AND LITERATURE (5). Examination of varying topics related to the intersection between literature and gender.
488. READINGS FOR HONORS (5). Pr., approval by the Honors Program. Individual reading programs in a specific area of literature or language, as determined by the instructor and student. An honors essay and a written examination will be required.
489. HONORS THESIS (5). Pr., approval by Honors Program. May be repeated once for credit with departmental approval.
524. APPROACHES TO TEACHING ENGLISH AS A SECOND LANGUAGE (5). Theory and practice of English as a Second Language (ESL) instruction.
525. SPECIAL TOPICS SEMINAR (3-5). May be repeated once for credit with department's approval.

COURSES FOR GRADUATE STUDENTS

602. THE PEDAGOGY OF BUSINESS AND TECHNICAL WRITING (5). Pr., CTS 502 or EH 604 or equivalent. Methods, practice and theories of business and technical communication courses for prospective instructors.
604. ENGLISH COMPOSITION: APPROACHES AND ISSUES (5). Theory, research and practice in English composition.
605. STUDIES IN COMPOSITION (5). Pr., EH 604 or departmental approval. The advanced study of an approach or an issue in composition studies. (May be repeated twice with permission of graduate director.)
613. FICTION WRITING (5). May be repeated up to 10 hours of credit. Workshop in the craft and writing of fiction.
614. POETRY WRITING (5). May be repeated up to 10 hours of credit. Workshop in the craft of poetry and a survey of contemporary American poets.
615. ENGLISH LITERATURE TO 1500 (5). Study of one or more dialects of Middle English and of major works and authors in one or more genres.
616. ENGLISH LITERATURE, 1500-1660 (5). Major literary movements, authors and/or genres.
617. ENGLISH LITERATURE, 1660-1800 (5). Major literary movements, authors, and/or genres.
618. ENGLISH LITERATURE, 1800-1900 (5). Major literary movements, authors, and/or genres.
619. AMERICAN LITERATURE TO 1900 (5). Major literary movements, authors, and/or genres.
620. 20TH CENTURY ENGLISH AND AMERICAN LITERATURE (5). Major literary movements, authors, and/or genres.
623. OLD ENGLISH LANGUAGE AND LITERATURE (5). Anglo-Saxon language, literature and culture.
625. ENGLISH LANGUAGE LEARNING AND DEVELOPMENT (5). Theories underlying the learning of English, especially as a non-native language.
627. THE STRUCTURE OF ENGLISH (5). Phonology, morphology and syntax of modern English.
628. STUDIES IN LINGUISTICS (5). Pr., EH 411, 627 or an equivalent course. Seminar on a topic or topics in English linguistics, e.g., historical syntax, dialectology, phonology. (May be repeated twice with permission of graduate director.)
630. RHETORIC: THEORY AND PRACTICE (5). Issues and developments in rhetorical theory and analysis, with special attention to the rhetoric of written texts. (May be repeated once with permission of graduate director.)
655. MAJOR ENGLISH AUTHOR(S) TO 1660 (5). One or more major authors or a single work by a major author. (May be repeated twice with permission of graduate director.)
656. MAJOR ENGLISH AUTHOR(S) SINCE 1660 (5). One or more major authors or a single work by a major author. (May be repeated twice with permission of graduate director.)
657. MAJOR ENGLISH AUTHOR(S) (5). One or more major authors or a single work by a major author. (May be repeated twice with permission of graduate director.)
658. MAJOR AMERICAN AUTHOR(S) (5). One or more major authors or a single work by a major author. (May be repeated twice with permission of graduate director.)
664. STUDIES IN NON-FICTION (5). Non-fiction prose of one or more periods of literary history or a specific problem in the genre. (May be repeated twice with permission of graduate director.)
665. STUDIES IN POETRY (5). Poetry of one or more periods of literary history or a poetic genre such as the lyric, the epic or the verse drama. (May be repeated twice with permission of graduate director.)
666. STUDIES IN DRAMA (5). Drama of one or more periods of literary history or a problem in the aesthetics of the dramatic art. (May be repeated twice with permission of graduate director.)
667. STUDIES IN FICTION (5). Fiction of one or more periods in literary history, a problem in the art of fiction or the work and influence of a major fiction writer. (May be repeated twice with permission of graduate director.)
674. ENGLISH LITERATURE AND CULTURE TO 1800 (5). The relations between one or more literary works and their cultural context. (May be repeated twice with permission of graduate director.)
675. ENGLISH LITERATURE AND CULTURE SINCE 1800 (5). The relations between one or more literary works and their cultural context. (May be repeated twice with permission of graduate director.)
676. AMERICAN LITERATURE AND CULTURE (5). The relations between one or more literary works and their cultural context. (May be repeated twice with permission of graduate director.)

- 680. STUDIES IN CRITICAL THEORY (5). Alternately, the history of literary criticism and contemporary critical theory. (May be repeated twice with permission of the graduate director.)
- 684. DIRECTED INDIVIDUAL STUDY (1-5). May be repeated up to 10 hours of credit. Available on a limited basis; requires departmental approval and permission of the department graduate committees.
- 690. STUDIES IN COMPARATIVE LITERATURE (5). Comparative study of authors, genres, or issues from two or more cultures or critical perspectives. (May be repeated twice with permission of graduate director.)
- 699. RESEARCH AND THESIS. (CREDIT TO BE ARRANGED.) May be taken more than one quarter.
- 799. RESEARCH AND DISSERTATION. (CREDIT TO BE ARRANGED.) May be taken more than one quarter.

Entomology (ENTI)

Professors Cupp, Head, Brewer, Clark, Cobb, Mullen and Smith
Associate Professors Appel, Cane, Gaylor, Freeman, Hyche, Strother, Weeks,
Williams and Zehnder

Assistant Professors Flanders, Moar and Oi

- 204. INSECTS (3). LEC. 3. Fall, Winter and Spring. Life processes, occurrence and importance of insects.
- 209. BEE BIOLOGY (3). LEC. 3. Winter. Principles of ecology, behavior, physiology and genetics will be used to understand the biology of bees and their ecological roles in pollination.
- 210. APICULTURE (2). LAB. 4. Pr., ENT 209. Spring. Apply knowledge of honey bee biology to the care and management of small apiaries for the production of honey and wax and for commercial pollination.
- 215. FOREST PESTS (4). LEC. 3, LAB. 1. Pr., BI 101-102. Spring. Diseases and pests of forest and shade trees from seedling to maturity. Pest damage to wood products will also be discussed. Field trip will emphasize major forest pest problems in Alabama.
- 304. GENERAL ENTOMOLOGY (5). LEC. 4, LAB. 3. Pr., BI 103. Spring, Summer. Introduction to the biology and diversity of insects.
- 404. INSECTS AFFECTING HUMANS, DOMESTIC ANIMALS AND WILDLIFE (5). LEC. 4, LAB. 1. Fall. Surveys insects, mites, ticks, spiders and other arthropods which attack man and domestic animals. Emphasis is on recognition of pest species, their biology and role in transmitting disease agents of veterinary or public health importance.
- 405. APPLIED ENTOMOLOGY (5). LEC. 4, LAB. 3. Pr., ENT 304. Spring. Biology, economic importance and management of the more important insect pests in each of the various agricultural commodity groups.
- 406. ALTERNATIVE METHODS OF INSECT PEST MANAGEMENT (5). LEC. 5. Pr., ENT 405. Fall. An introduction to insect management tactics other than chemical insecticides.
- 491. ENTOMOLOGY INTERNSHIP (UP TO 5 HRS. PER QUARTER, 15 HRS. MAXIMUM.) Departmental approval, SU graded. Provides practical job experience under joint supervision of the internship advisor and appropriate state, federal or private agency. Training will prepare student for potential career employment.
- 498. SPECIAL PROBLEMS OR TOPICS (1-3). Pr., senior standing. A student can register for a total of not more than three hours credit.

ADVANCED UNDERGRADUATE AND GRADUATE

- 502. ECONOMIC ENTOMOLOGY (5). LEC. 4, LAB. 3. Fall, Spring. Consideration of the biological aspects, life histories and control of insects. Not for graduate credit for students in College of Agriculture departments.
- 503. TOXICOLOGY OF INSECTICIDES (5). LEC. 4, LAB. 3. Winter. Toxic actions of insecticides; formulations, application methods and uses of insecticides; research methods and uses of insecticides; research methods in insect toxicology; insecticide residues in relation to man and the environment.
- 505. FOREST INSECTS (5). LEC. 4, LAB. 3. Pr., ENT 304 or 502. Fall, even years. Principal insects of forests and forest products; their importance, taxonomy, bionomics and control.
- 506. IMMATURE FORMS OF INSECTS (5). LEC. 2, LAB. 6. Pr., ENT 304 or equivalent. Winter. Structure and identification of immature forms of insects; methods of collecting and preserving; development and use of keys for classifying immature insects.
- 507. GENERAL INSECT MORPHOLOGY (5). LEC. 3, LAB. 6. Pr., ENT 304 or equivalent. Winter. Form and function in insects and related arthropods. Morphological characteristics used in insect identification is emphasized.
- 510. INSECT IDENTIFICATION (5). LEC. 3, LAB. 4. Pr., ENT 304 or equivalent. Spring. Learn to use the tools of the taxonomist to identify the more common insect families. A collection is required. Field trips will be taken.
- 513. INTRODUCTION TO THE BIOLOGICAL CONTROL OF INSECTS, PLANT PATHOGENS, NEMATODES AND WEEDS (5). LEC. 4, LAB. 2. Pr., ENT 304 or 502 and PLP 309 or equivalents or departmental approval. Winter. Biology, ecology and utilization of biotic agents to control insect pests, plant pathogens, plant pathogenic nematodes and weeds. Same course as PLP 513.
- 514. AQUATIC INSECTS (5). LEC. 3, LAB. 6. Pr., ENT 304. Winter. Biology and ecology of aquatic and semi-aquatic insects. Laboratory sessions focus on identification at family and generic levels with the emphasis on taxa in the Southeastern U.S. Experience in collection and field techniques is provided.
- 526. INTEGRATED FOREST PEST MANAGEMENT (4). LEC. 3, LAB. 1. Pr., ENT/PLP 215, FY 310. Fall. Principles of integrated management of insects and fungi that attack commercially-important forest and shade trees. Pertinent aspects of biology and ecology of selected pests will be presented. Computer models for pest management is stressed.

COURSES FOR GRADUATE STUDENTS

602. CHEMICAL ECOLOGY (5). LEC. 3. Pr., five quarter hours CH 207 or five quarter hours of General Ecology, or departmental approval. Winter, even years. Chemical mediation of biotic interactions between organisms and their environment.
607. INSECT FORM AND FUNCTION (5). LEC. 3. LAB. 4. Pr., ENT 304 or equivalent. Winter. Comparative external anatomy and generalized internal structures of insects. Characteristics used in taxonomy will be emphasized.
608. URBAN ENTOMOLOGY (5). LEC. 3. LAB. 6. Pr., ENT 304 or equivalent. Fall. Identification, biology and control of insect and other household arthropod pests.
609. ADVANCED INSECT MANAGEMENT (5). LEC. 5. Pr., ZY 306 or equivalent. Fall, even years. Integrated control of the principal insect pests by environmental, biological, genetic, chemical and legal means.
610. SYSTEMATIC ENTOMOLOGY (5). LEC. 3. LAB. 6. Pr., ENT 304. Spring. Principles of systematics and identification of insects through orders, families, genera and species. Insect collection required.
611. PHYLOGENETIC SYSTEMATICS (5). LEC. 5. Pr., ZY 303 or equivalent. Winter, odd years. Theoretical, philosophical and practical problems of determination of phylogenetic relationships of species and higher taxa and their classification.
615. POPULATION DYNAMICS AND MODELING FOR BIOLOGISTS (5). LEC. 3. LAB. 2. Pr., ZY 306 or equivalent. Spring. Quantitative methods for analyzing the population dynamics of organisms; also an introduction to design, construction and evaluation of deterministic simulation models.
619. PLANT/ANIMAL INTERACTIONS (5). LEC. 5. Pr., ZY 306 or equivalent or departmental approval. Winter, odd years. Overview of ecological and evolutionary interrelationships between animals and higher plants, including pollination biology, seed dispersal ecology and plant-herbivore interactions.
625. MEDICAL-VETERINARY ENTOMOLOGY (5). LEC. 4. LAB. 3. Pr., ENT 304. Fall, even years. Insects, mites and other arthropods of medical and veterinary importance with emphasis on identification of pest species, their biology and role in the epidemiology of arthropod-borne diseases.
670. TROPICAL BIOLOGY: AN ECOLOGICAL APPROACH (12). LEC. 6. LAB. 12. Pr., 20 hours of biological courses at or above the 500-level. Winter, Summer. In-depth introduction to the principles of ecology as they operate in the tropics. Orientation and introductory lectures in San Jose, Costa Rica, followed by field work of 2-10 days at each of six or more contrasting tropical sites. Enrollment contingent on acceptance of student by the Organization of Tropical Studies.
693. SEMINAR. (CREDIT TO BE ARRANGED.) Required of all M.S. candidates. All quarters.
698. SPECIAL PROBLEMS AND TOPICS (2-5). Consult individual faculty member before registering.
699. RESEARCH AND THESIS. (CREDIT TO BE ARRANGED.)
701. ADVANCED INSECT MORPHOLOGY AND DEVELOPMENT (5). LEC. 3. LAB. 6. Pr., ENT 607. Fall, odd years. A comparative study of selected arthropod structures and a consideration of embryological development and metamorphosis in insects.
703. INSECT PHYSIOLOGY (5). LEC. 3. LAB. 6. Pr., ZY 524 and ENT 701. Spring, even years. General and comparative physiology of the organ systems of insects. A minimum of two literature reviews will be made by each student during the quarter.
712. ADVANCED INSECT TOXICOLOGY (5). LEC. 4. LAB. 3. Pr., CH 518. Spring, odd years. Mode of action, mode of entry, relation of chemical structure to toxicity and precision methods of determination of insecticides; recent developments in the field of insecticide chemistry.
713. INSECT PATHOLOGY (5). LEC. 3. LAB. 4. Pr., MB 300, ENT 304 or equivalent and departmental approval. Spring, even years. The microorganisms associated with diseases in insects and their pathological effects on insects and insect populations.
714. BIOLOGICAL CONTROL OF INSECTS (5). LEC. 4. LAB. 3. Pr., ENT 304 and ZY 306 or equivalent and departmental approval. Spring, odd years. Biology, ecology, classification and behavior of predators, parasites and disease agents influencing insect populations. Utilization of biotic agents for management of pest populations.
720. ARACHNOLOGY (5). LEC. 3. LAB. 6. Pr., ENT 304. Fall, odd years. Biology, behavior and systematics of arachnids with major emphasis on spiders and mites.
793. SEMINAR. (CREDIT TO BE ARRANGED.) Required of all Ph.D. candidates.
798. SPECIAL PROBLEMS OR TOPICS (1-5) Pr., Ph.D. standing. Special research projects or study topics directed by individual faculty member. Consult faculty member before registering.
799. DOCTORAL RESEARCH AND DISSERTATION. (CREDIT TO BE ARRANGED.)

Environmental Science (ENS)

For information on this program refer to the description of the curriculum in the Interdepartmental curricula section of the *Bulletin*.

Finance (FI)Professors Jahera, *Head*, Barth, Hand and Lloyd

Associate Professors Crutchley, Hudson, Jensen, McCord, Page, Pugh and Tole

Assistant Professor Colquitt

A 2.0 GPA is required for enrollment in any Business course at the 300-level or above. This rule applies to both Business and non-Business students.

- 320. RISK AND INSURANCE (5). Pr., FI 361. Essentials of risk management, with emphasis on the use of insurance in meeting these risks; including the characteristics of property, liability, life and health insurance.
- 323. REAL ESTATE (5). Pr., FI 361. Fundamental principles and practices as applied to the purchase, sale, lease, mortgage, title and management of real estate.
- 340. PERSONAL FINANCE (5). Pr., junior standing. Plans for managing personal financial problems involving insurance, housing, household budgeting, investments, personal and bank loans, credit and time buying, etc.
- 361. PRINCIPLES OF BUSINESS FINANCE (5). Pr., AC 212 or 215, EC 202 or 301 and junior standing. Short-term, intermediate and long-term financing of business firms.
- 362. SMALL BUSINESS FINANCE (5). Pr., FI 361. Continuation of FI 361 with emphasis on financial control, financial forecasting, investment decision-making, identification of sources of financing in a small business environment.
- 363. ADVANCED BUSINESS FINANCE (5). Pr., FI 361 and MN 301. Continuation of FI 361 with emphasis on capital budgeting, cost of capital, growth, promotion and reorganization.
- 367. MONEY MARKETS AND FINANCIAL INSTITUTIONS (5). Pr., FI 361. Structure and operation of commercial banks and other financial institutions and their role in the financing of business.
- 400. STUDENT INTERNSHIP PROGRAM (1-10). Pr., junior standing and selection by the faculty committee. S/U graded.
- 421. PROPERTY INSURANCE (5). Pr., FI 320. The principles, uses and types of insurance with particular emphasis on fire, marine, automobile and casualty lines.
- 422. LIFE INSURANCE (5). Pr., FI 320. The organization of the life insurance business and the various types of contracts.
- 423. REAL ESTATE FINANCE AND INVESTMENT (5). Pr., FI 323 or departmental approval. Analysis and evaluation of real estate investments.
- 451. MULTINATIONAL FINANCIAL MANAGEMENT (5). Pr., FI 361. The impact of various tax regulations, currency controls and exchange rates on the multinational firm.
- 463. FINANCIAL MANAGEMENT: CASES AND COMPUTER APPLICATIONS (5). Pr., AC 311 and FI 363. The analysis of complex financial management cases with computers.
- 464. INVESTMENTS (5). Pr., FI 361, MN 301 and junior standing. Individual investment policies, investment institutions and types of investments available.
- 466. SECURITY ANALYSIS AND PORTFOLIO MANAGEMENT (5). Pr., AC 311, FI 363 and 464. Analysis techniques and selection of securities to meet specific investment objectives.
- 469. MANAGEMENT OF FINANCIAL INSTITUTIONS (5). Pr., AC 311, FI 361 and 367. Concentration on internal operations of financial institutions, especially banks.
- 470. HONORS READINGS (1-6). Pr., open only to persons in the University Honors Program and with consent of the student's Honors Advisor.
- 471. UTILITY FINANCE (5). Pr., AC 311 or departmental approval and FI 363. An in-depth study of financial applications related to public utilities.
- 472. HONORS THESIS (1-6). Pr., open only to persons in the University Honors Program and with consent of the student's Honors Advisor.
- 490. SPECIAL PROBLEMS (1-10). Pr., FI 363 and senior standing. Advanced individual research and study in finance under guidance of a faculty member. S/U graded.

COURSES FOR GRADUATE STUDENTS

- 650. SEMINAR (1-10). Pr., departmental approval. For students engaged in intensive study and analysis of accounting and finance problems.
- 651. ADVANCED MULTINATIONAL FINANCIAL MANAGEMENT (5). Pr., FI 661 or equivalent and departmental approval. Finance-related problems and policies of the multinational firm, emphasizing taxes, accounting, exchange risk and capital budgeting.
- 661. CONCEPTS OF MANAGERIAL FINANCE (3). Coreq., AC 613 or equivalent. Accelerated course in finance and business applications.
- 663. ADVANCED CORPORATION FINANCE (5). Pr., AC 610, FI 661 or equivalent, and, MN 604. Intensive study of theory and problems of business from a decision-making internal, problem-solving point of view.
- 664. INVESTMENT ANALYSIS AND MANAGEMENT (5). Pr., FI 661 or equivalent or departmental approval. Types of investment securities, securities markets and the characteristics and functions of various securities.
- 665. CASES IN FINANCIAL MANAGEMENT (5). Pr., FI 663. The application of formal analytical techniques to practical business situations requiring financial decisions through use of the case approach.

- 666. SECURITY ANALYSIS AND PORTFOLIO MANAGEMENT (5). Pr., FI 661 or equivalent or departmental approval. Principle methods for valuing securities, such as stocks and bonds and techniques for managing investment portfolios.
- 669. ADVANCED FINANCIAL MARKETS AND INSTITUTIONS (5). Pr., FI 663. Financial institutions and markets and their impact on business decisions.
- 690. SPECIAL PROBLEMS (1-5). Pr., departmental approval. Variable content in the accounting and finance areas.
- 699. RESEARCH AND THESIS (CREDIT TO BE ARRANGED.)

Fisheries and Allied Aquacultures (FAA)

Professors Jensen, *Head*, Bayne, Boyd, Duncan, Dunham, Grizzle, Grover, Hosking,
Lovell, Lovshin, Plumb and Rouse

Associate Professors Brady, DeVries, Maceina, Masser, Phelps, Popma,
Szedlmayer and Wallace

Assistant Professors Irwin and Liu

Affiliate Professor Lim

Affiliate Associate Professor Malvestuto

Affiliate Assistant Professor Freeman

- 201. COMMERCIAL MARINE FISHERIES OF ALABAMA (3). Summer. Exploitation and biology of commercial vertebrates and invertebrates of Alabama and the adjoining Gulf of Mexico, with emphasis on distribution, harvesting technology, processing and economic values. Laboratory exercises include visits to local processing plants and a trawling expedition. Taught only at Dauphin Island Sea Lab.
- 312. PRACTICAL FISH CULTURE (5). AS ARRANGED. Credit will be arranged for 3 months in a state or federal hatchery or in an approved commercial hatchery or on other phases of fish culture. All students wishing to take this course must obtain permission from the head of the department.
- 315. FISHERIES AND ALLIED AQUACULTURES INTERNSHIP (1-5). S/U graded. Discipline-related learning while employed with cooperating private industry and state and federal agencies.
- 393. UNDERGRADUATE SEMINAR (1). Fall. Consideration of various aspects of fisheries work, career options as related to individual interests and curriculum planning.
- 402. FISH HEALTH MANAGEMENT (5). LEC. 4, LAB. 3. Pr., BI 103 or departmental approval. Spring. Parasitic, bacterial and viral diseases of fish and economically important crustacean and molluscan species. Emphasis on management practices to control diseases.
- 425. MANAGEMENT OF AQUATIC FLORA IN FISHERIES AND AQUACULTURE (5). LEC. 3, LAB. 6. Pr., BI 102 or departmental approval. Summer, odd years. The role of aquatic vegetation in fish production, its utilization and control.
- 454. HATCHERY MANAGEMENT I (5). Pr., FAA 511. Winter. Warm-water fish seed production systems.
- 455. HATCHERY MANAGEMENT II (5). LEC. 2, LAB. 9. Pr., FAA 454. Spring. Utilization of modern advances in induced and natural warm-water fish spawning.
- 498. SPECIAL PROBLEMS IN FISHERIES AND AQUACULTURES (1-5). Pr., senior standing. A student can register for a total of not more than five hours credit.

ADVANCED UNDERGRADUATE AND GRADUATE

- 501. COMMERCIAL AQUACULTURE (3). LEC. 3. Pr., BI 103. Winter. Status and potential of commercial aquatic farming in Alabama and the Southeastern United States; resources required for diversification of agriculture through aquatic crops and their integration with traditional land crops.
- 502. LIMNOLOGY (5). LEC. 3, LAB. 6. Pr., CH 104 and BI 103. Spring. Biological, chemical and physical factors affecting aquatic life.
- 506. CATFISH PRODUCTION (5). Summer, even years. Pr., BI 103 or departmental approval. Principles and practices of farm commercial catfish production. Offered as week-long short course at Auburn with preparatory reading and additional day field trip.
- 510. ORGANIZATION, PROGRAMMING AND IMPLEMENTATION OF AQUACULTURAL EXTENSION (3). LEC. 1, LAB. 6. Pr., AEC 202 or equivalent. Summer. Concepts and practices pertaining to aquacultural extension organization, administration, program development and implementation in the U.S. and developing countries.
- 511. PRINCIPLES OF AQUACULTURE (5). LEC. 5. Pr., BI 103 and junior standing. Fall. Principles underlying aquatic productivity and levels of management as demonstrated by present practices of fish culture around the world.
- 519. MARINE AQUACULTURE (9). Pr., ZY 401, FAA 538 or ZY 538. Summer. An introduction to principles and technologies applied to the culture of commercially important marine organism. Offered only at the Gulf Coast Research Laboratory, Ocean Springs, MS.
- 520. AQUACULTURAL PRODUCTION I (5). LEC. 3, LAB. 8. Pr., BI 103. Spring. Farm organization and operation. Development of skills and attitudes of applied, practical aquaculture emphasizing facility organization and scheduling, equipment use, establishing fish pond populations and crop management in ponds and other culture facilities.
- 521. AQUACULTURAL PRODUCTION II (5). LEC. 3, LAB. 8. Pr., BI 103. Summer. Application and practice of aquacultural technology and management emphasizing fish health, nutrition, hatchery operations, water quality and general environmental management.

530. POND CONSTRUCTION (5). LEC. 2, LAB. 9. Summer. Principles and practice of site selection, design and construction of aquacultural facilities with emphasis on ponds.
536. MANAGEMENT OF SMALL IMPOUNDMENTS (5). LEC. 3, LAB. 6. Pr., BI 103. Spring. Consideration of the species of fish used in management of small impoundments, species balance, population balance analysis, methods of correcting unbalanced conditions, renovation of old impoundments and related problems of water management.
537. FISHERIES BIOLOGY (4). LEC. 3, LAB. 4. Pr., BI 103. Fall. Introduction to vital statistics of fish populations.
538. GENERAL ICHTHYOLOGY (5). LEC. 3, LAB. 6. Pr., BI 103. Winter. Survey of functional morphology, classification and distribution of fishes. Introduction to faunistic literature of North America and the world. Identification of fishes from the Gulf of Mexico and North American fresh waters.
542. MARINE FISHERIES MANAGEMENT (6). Pr., departmental approval. Summer. Overview of practical marine fishery management problems. Offered only at the Gulf Coast Research Laboratory, Ocean Springs, MS.
550. MARINE ICHTHYOLOGY (9). Pr., ZY 306, FAA 538 or ZY 538, and/or departmental approval. Summer. General background in the biology of marine fishes. Emphasis placed on the principles involved in the classification and taxonomy of marine and estuarine fishes. Offered only at the Gulf Coast Research Laboratory, Ocean Springs, MS.
560. PROFESSIONAL AND RESEARCH ORIENTATION (3). LEC. 3. Pr., senior standing. Fall. Concepts of professionalism, professional ethics, technical writing, research design and operations.
580. WATER SCIENCE (5). LEC. 5. Pr., organic chemistry or departmental approval. Fall. Properties of water, the water cycle, basic water chemistry and water quality with emphasis on water in managed ecosystems.

COURSES FOR GRADUATE STUDENTS

602. FISH HEALTH MANAGEMENT (5). LEC. 4, LAB. 3. Pr., BI 103, MB 300, FAA 511 and departmental approval. Spring. Parasitic, bacterial and viral disease of fish and economically important crustacean and molluscan species. Emphasis on management practices to control diseases. Students will prepare an in-depth fish health management plan. Intended for FAA Master of Aquaculture students and non-Fisheries graduate students.
615. QUANTITATIVE TECHNIQUES IN FISHERY ASSESSMENT (5). LEC. 3, LAB. 6. Pr., FAA 537/539, DMS 501, 511 and 601 or departmental approval. Winter, odd years. Quantitative techniques to assess and manage fish populations in freshwater. The laboratory will analyze actual fisheries data using SAS on personal computers.
617. FISH POPULATION DYNAMICS (4). LEC. 3, LAB. 4. Pr., DMS 501, FAA 537. Winter, even years. Derivation of fish population estimates, growth, recruitment and mortality; use of modeling techniques to assess exploited fish populations.
619. CRUSTACEAN AND MOLLUSCAN AQUACULTURE (3). LEC. 3. Pr., FAA 511 or departmental approval. Fall. General biology and culture techniques of the major shrimp, crawfish and shellfish species cultured throughout the world.
620. FISH PROCESSING TECHNOLOGY (5). LEC. 3, LAB. 6. Pr., CH 208, BY 300 or departmental approval. Winter, odd years. Chemical and biological aspects of fishery products as they are related to the use of these products for human foods; principles of preservation; unit operations in processing; packaging, storage and distribution.
621. FISH NUTRITION (3). LEC. 3. Pr., CH 208, course in physiology or nutrition or departmental approval. Summer. Fundamental and applied aspects of fish nutrition, including the physiology of food assimilation, nutrient requirements, nutrient chemistry of feed sources and practical feeding.
- 621L. FISH NUTRITION LABORATORY (2). LAB. 6. Coreq., FAA 621. Laboratory exercises in analysis of fish feeds and formulation and preparation of fish feeds.
625. MANAGEMENT OF AQUATIC FLORA IN FISHERIES AND AQUACULTURE (5). LEC. 3, LAB. 6. Pr. or coreq., BY 506 or equivalent and departmental approval. Summer, odd years. Role of aquatic vegetation in fish production, its utilization and control.
637. STREAM ECOLOGY (4). LEC. 2, LAB. 3. Pr., FAA 515 or 624 or departmental approval. Fall. Physical, chemical and biological aspects of river and stream ecosystems emphasizing aquatic resource management and impact assessment.
638. RESERVOIR LIMNOLOGY (4). LEC. 3, LAB. 3. Pr., FAA 502 or equivalent. Summer, even years. Consideration of the unique ecological characteristics of reservoirs.
640. FISH PARASITOLOGY (3). LEC. 3. Pr., BI 103. Fall. Basic concepts of fish parasitology and epizootiology, identification and control of fish parasites.
641. FISH PARASITOLOGY LABORATORY (2). LAB. 6. Pr., BI 103. Fall. Laboratory and field exercises emphasizing the collection, preparation and identification of fish parasites.
642. MICROBIAL FISH DISEASES (5). LEC. 3, LAB. 6. Pr., MB 300. Spring. Bacterial and viral diseases of fishes, their isolation, culture, identification and control.
644. MORPHOLOGY AND PHYSIOLOGY OF FISH (5). LEC. 3, LAB. 6. Pr., FAA 538 or departmental approval. Winter. Advanced studies of fish morphology and physiology. Emphasis is on teleosts and topics of importance to students of fishery biology, aquaculture and fish health.
645. ADVANCED FISH PARASITOLOGY (3). LEC. 1, LAB. 6. Pr., FAA 640, 641. Winter, even years. Morphology, taxonomy, life history, ecology and pathological effects of parasites of fish.
646. ADVANCED MICROBIAL FISH DISEASES (3). LEC. 1, LAB. 6. Pr., FAA 642 or departmental approval. Fall, odd years. The epizootiology, pathogenesis, isolation, taxonomy and immunology of bacterial and viral diseases of fish.

Foreign Languages and Literatures

647. CLINICAL FISH DISEASE DIAGNOSIS (1-3). Pr., FAA 640, 641, 642, 644 or departmental approval. Any quarter by arrangement. Clinical diagnosis of fish diseases; Necropsy of diseased fish and formulating corrective measures for diseased condition. May be repeated for a maximum of six hours credit.
649. FISH PATHOLOGY (5). LEC. 2, LAB. 3. Pr., FAA 640, 641, 642, 644 or departmental approval. Fall, even years. Structural and functional changes produced by fish diseases.
653. FISH GENETICS AND BREEDING (5). LEC. 5. Pr., ZY 300, FAA 511 or departmental approval. Fall, odd years. Philosophy of breeding in fishes and other aquatic animals; methods in fish breeding; traditional animal breeding, genetic engineering and other biotechnologies; inheritance of characters responsible for efficient fish production.
654. HATCHERY MANAGEMENT I (5). LEC. 5. Pr., FAA 511. Winter. Advanced study of warm-water fish seed production systems.
655. HATCHERY MANAGEMENT II (5). LEC. 2, LAB. 9. Pr., FAA 654. Spring. Utilization of modern advances in induced and natural warm-water fish spawning.
660. FISH ECOLOGY (4). LEC. 3, LAB. 3. Pr., ZY 306 or equivalent. Spring. Interactions among fish and all aspects of their environment, including other fish. Laboratory emphasizes experimental approaches to studying ecology, using fish as the target organism.
670. BIOLOGICAL OCEANOGRAPHY (6). LEC. 4, LAB. 2. Spring. Comprehensive survey of marine organisms and their environmental interactions. Taught at Dauphin Sea Lab.
671. MARINE PLANT-ANIMAL INTERACTIONS (3). Pr., ZY 303, 306, 548 or departmental approval. Examines herbivory, plant defenses, evolution, co-evolution, symbiosis, plant chemistry, natural history, habitat selection and community ecology with emphasis on recent marine work. Taught at Dauphin Island Sea Lab.
683. WATER QUALITY IN AQUACULTURE (3). LEC. 3. Pr., FAA 580 or departmental approval. Fall. Physical, chemical and biological techniques for water quality management in aquaculture systems.
- 683L. WATER QUALITY LABORATORY (2). LAB. 6. Pr. or Coreq., FAA 683. Fall.
686. POND SOILS AND SEDIMENT (3). LEC. 3. Pr., AY 304 or 307, FAA 580 or departmental approval. Summer. Physical, chemical and biological aspects of aquatic soils and sediment with emphasis on bottom soil management in pond aquaculture.
- 693/793. SEMINAR (1). LEC. 1. Fall, Winter. Graded S-U.
- 698/798. SPECIAL PROBLEMS IN FISHERIES AND ALLIED AQUACULTURES (2-5). (A). Aquaculture; (B). Aquatic Ecology; (C). Biology and Management; (D). Aquaculture Paper; (E). Nutrition; (F). Pathology; (G). Processing and Technology; (H). Water Quality; (I). Technology Transfer; (J). Computer Applications; (K). Aquacultural Facilities; (L). Crustacean Aquaculture; (M). Hatchery Management; (N). Fish Virology; (O). Fish Bacteriology; (P). Fish Genetics and Breeding; (Q). Ecology of Fish.
699. RESEARCH AND THESIS. (CREDIT TO BE ARRANGED.)
799. DOCTORAL RESEARCH AND DISSERTATION. (CREDIT TO BE ARRANGED.)

Foreign Languages and Literatures

Professors Madrigal, Chair, Alvarez, Escarpanter, Henkels and Spencer

Associate Professors Buck, Glaze, Katainen, Kuntz, Latimer, Mazaheri, Mitrevski, Morris,
Nadar, Raby and Torrejón,

Assistant Professors Gramberg, Miranda and Weigel

It is to the advantage of students to begin foreign language at the highest possible level because by so doing they can gain college credits through advanced placement. On the basis of the Foreign Language Department's evaluation of their previous foreign language training and/or test scores, they may enter the second, third or fourth quarter course in a language. If they make a grade of C or higher, they will receive 10, 15 or 20 hours, respectively (5 credit hours for the course and 5, 10 and 15 hours, respectively, for advanced placement). If students are well enough prepared, they may enter at a level higher than the fourth quarter, but they will not receive more than 15 hours through advanced placement.

If they do not earn at least a C, they will not be granted advanced placement credit. They may then enter the language at a lower level, re-enter at the same level or attempt another approved language. Credits earned through advanced placement may be applied toward graduation as well as toward foreign language requirements in various curricula.

While eligible for advanced placement as indicated above, students who are native speakers in a foreign language may begin courses in that language only at the 300-level or higher - excluding conversation courses altogether - if they have received substantial academic preparation in that same language (such as the French Baccalaureate, the German Abitur, the Spanish Bachillerato or higher).

Students who are either foreign or U.S. ethnic native speakers in a foreign language, but with minimal or limited academic preparation therein, may begin courses in that language only at the 200-level or higher. If special situations arise, such as foreign language learning through extensive residence abroad, the advisor for the specific language involved will make an appro-

prate entry level determination, within the framework of these guidelines, upon request of the instructor in whose class the student is enrolled.

In following courses, the (*) denotes the course carries five quarter hours of credit only when taken in the Auburn Abroad Program. Auburn Abroad costs vary by geographic location. Current program costs are available from the department.

LANGUAGE PROFICIENCY, INTERNSHIPS AND HONORS COURSES

- 177-178. **READING PROFICIENCY IN RUSSIAN.** (3). Pr. FL 177 for FL 178 or departmental approval. Winter, Spring. Primarily for graduate students, who should consult their advisors for specific departmental language requirements. FL 178 channels students into their field of study, e.g., humanities, social sciences and sciences. May not be used to satisfy undergraduate language requirements. S/U grade only.
391. **LYRIC DICTION PROFICIENCY IN FRENCH, GERMAN, ITALIAN.** (3). Winter. Stress on phonetics and prosody. Primarily for undergraduate students in music seeking technical control of lyric diction and prosody in French, German and Italian. May be used for foreign language students for elective credit only. This course does not substitute for the three quarters of foreign language required for the Bachelor of Music degree. May be repeated without credit.
470. **HONORS READING AND SPECIAL TOPICS** (3-6). Pr., admission to University Honors Program; junior or senior standing. May be repeated for a maximum of six hours. Open only to students in the Honors Program with the consent of the Honors Program Advisor.
471. **HONORS THESIS.** (3-6). A requirement for the honors student. Directed readings and research terminating in a thesis. May be repeated once for a maximum of six hours credit.
499. **FOREIGN LANGUAGE INTERNATIONAL TRADE INTERNSHIP** (1-6). Pr., junior standing and departmental approval. Specific number of hours and applicability toward major to be determined in consultation with the advisor. May be repeated for a maximum of six credits.
501. **DIRECTED READINGS ON WRITINGS BY AND ABOUT WOMEN** (1-5). Readings on women authors and the representation of women in literature (excluding American and English writers).
502. **SEMINAR ON WRITINGS BY AND ABOUT WOMEN** (3). Seminar on women authors and the representation of women in literature (excluding American and English writers). Seminar may be repeated with change in topics.

CHINESE (CN)

- 101-102-103. **FIRST YEAR CHINESE I-II-III** (5-5-5). CN 101 pr. for 102; 102 for 103. Fundamentals of Chinese. Stress on language skills, with progressive emphasis on conversation. Exposure to Chinese civilization.
- 201-202-203. **INTERMEDIATE CHINESE I-II-III** (5-5-5). Pr. CN 103 or equivalent. CN 201 pr. for 202; 202 pr. for 203. Stress on language skills; structural review and composition; readings in Chinese literature and exposure to Chinese civilization.
284. **INTRODUCTION TO CONTEMPORARY CHINESE CULTURE** (in English) (3). Emphasis on geographic, social, artistic and spiritual forces in contemporary Chinese culture.
285. **INTRODUCTION TO CHINESE CIVILIZATION** (in English) (3). Emphasis on literature and arts.

FRENCH (FR)

- 101-102-103. **FIRST YEAR FRENCH I-II-III** (5-5-5). FR 101 pr. for 102; FR 102 pr. for 103. Fundamentals of French; language skills stressed with progressive emphasis on conversation. Exposure to French civilization.
- 111-112. **READING PROFICIENCY IN FRENCH.** (3). Pr., FR 111 for FR 112 or departmental approval. Winter and Spring. Primarily for graduate students, who should consult their advisors for specific departmental language requirements. FR 112 channels students into their field of study, e.g., humanities, social sciences and sciences. May not be used to satisfy undergraduate language requirements. S/U grade only.
220. **FRENCH PHONETICS AND PRONUNCIATION** (1) Pr., FR 101 or equivalent. Introduction to French phonetics and practice in basic French pronunciation patterns.
- 201-202-203. **SECOND YEAR FRENCH I-II-III** (4-4-4). Pr., FR 103 or equivalent. FR 201 pr. for 202; FR 202 pr. for 203. Exceptions to this sequence may be granted by departmental consent or when course offerings so require. Language skills stressed; structural review and composition; reading in French literature; exposure to French civilization.
301. **FRENCH CONVERSATION** (3 OR 5 *). Pr., FR 203 or equivalent. Fall. Practice in spoken, everyday French, based on texts and situations concerning contemporary life especially in France. May be repeated once for credit but counted only once toward a major.
302. **FRENCH COMPOSITION** (3 OR 5 *). Pr., FR 203 or equivalent. Winter. Practice in writing letters, brief articles, themes and reports, based on original composition and on translation. May be repeated once for credit but counted only once toward a major.
303. **FRENCH CIVILIZATION** (3). Pr., FR 203 or equivalent. Spring. Consideration of topical aspects of the cultural heritage of France, as reflected in present day life patterns, traditions and institutions.
304. **FRENCH PHONETICS AND DICTION** (3 OR 5 *). Pr., FR 203 or equivalent. Spring. Basic principles of French phonetics and diction through sound recognition, discrimination and intensive practice.
305. **TOPICS IN FRENCH LITERATURE AND CULTURE IN ENGLISH** (3). Topics from French literature and culture of general interest to students with little or no French.
310. **INTRODUCTION TO FRENCH LITERATURE** (3). Pr., FR 301, 302 or equivalent. Grounding in basic analytical approaches, language skills and critical techniques. Essential tools for thematic chronological surveys of literature to follow.

Foreign Languages and Literatures

311. SURVEY OF FRENCH LITERATURE I (3). Pr., FR 310. Fall. Readings in French literature from the Middle Ages through the 18th century (prose, theatre and poetry). Centered on a theme or topic. Cannot be repeated for credit.
312. SURVEY OF FRENCH LITERATURE II (3). Pr., FR 310. Winter. Readings in French literature from the 19th century to the present (prose, theatre and poetry). Centered on a theme or topic. Cannot be repeated for credit.
321. BUSINESS FRENCH (3). Pr., FR 203 or equivalent. Intensive practice in preparing commercial correspondence and reading contracts, agreements and related documents in French. Emphasis will be placed on the acquisition of a business-oriented vocabulary.
331. SPECIAL TOPICS IN FRENCH LITERATURE CULTURE OR LANGUAGE (3 OR 5**). Pr., FR 203 or equivalent. Special aspects of French literature or culture along with social, political, intellectual issues and cultural reflections or an in-depth study of French syntax, morphology or phonetics. The focus will be announced at least one quarter prior to its being scheduled. May be repeated once for credit.
402. ADVANCED GRAMMAR AND STYLISTICS (3). Pr., FR 302 and three other 300-level French courses or equivalent. Practice in writing and analyzing French texts, with emphasis on advanced grammar topics and stylistics.
404. TRANSLATION (3). Pr., FR 302 and three other 300-level French courses or equivalent. Techniques and problems of English-French and French-English translation.
421. FRENCH FOR INTERNATIONAL TRADE (4). Pr., FR 321 or equivalent. Continues topics in FL 329. Practical exercises in preparing and translating trade correspondence and documents in French, as well as assigned group work and case studies under simulated real-life pressures.
431. ADVANCED TOPICS IN FRENCH LITERATURE, CULTURE OR LANGUAGE (3). Pr., four 300-level French courses or equivalent. Advanced aspects of French literature or culture along with social, political and intellectual issues and cultural aspects of texts. May be repeated once for credit.
432. INDEPENDENT WORK IN FRENCH (3 OR 5 *). Pr., four 300-level French courses or equivalent. Directed study in area of special interest for the superior student in French. May be repeated once for credit.
433. FRENCH CONTINUING CONVERSATION (1). Pr., FR 301 and 302 or equivalent. Continuing practice in spoken French to maintain and upgrade proficiency while completing other requirements for graduation. May not be counted toward a major, but may be repeated once for credit.
434. FRENCH CONTINUING COMPOSITION (1). Pr., FR 301 and 302 or equivalent. Continuing practice in written French to maintain and upgrade proficiency while completing other requirements for graduation. May not be counted toward a major, but may be repeated once for credit.

FRENCH COURSES FOR GRADUATE STUDENTS

600. FOREIGN LANGUAGE CAREER INTERNSHIP (1-5). Pr., appropriate training and departmental approval. Specific number of hours and applicability toward major to be determined in consultation with the advisor. May be repeated for a maximum of six credits.
- *601. ADVANCED FRENCH CONVERSATION (4 or 5). Pr., four 300-level French courses or equivalent. Training in oral French to increase vocabulary, improve fluency and pronunciation. May be repeated once for credit.
602. FRENCH PHONETICS, PRONUNCIATION AND DICTION (4). Exercises and training in advanced techniques of French phonetics, pronunciation and diction.
- *603. ADVANCED FRENCH COMPOSITION (4 or 5). Pr., four 300-level French courses or equivalent. Exercises in advanced grammar and syntax designed to enhance the student's linguistic ability. Practice in composition, *explication de texte* and in the use of stylistic devices derived from significant literary sources.
604. FRENCH STYLISTICS AND EXPLICATION DE TEXTE (4). Exercises and training in advanced techniques of French *explication de texte*, stylistics and writing skills.
- *605. ADVANCED FRENCH CIVILIZATION (4 or 5). Pr., four 300-level French courses or equivalent. An in-depth study of French civilization, with emphasis on the relationship of history, arts and literature from the Middle Ages to the present.
606. CONTEMPORARY FRENCH CIVILIZATION (4). Pr., four 300-level French courses or equivalent. Society, institutions, values and lifestyle in modern France.
607. FRENCH TRANSLATION SKILLS (4). Pr., four 300-level French courses. Exercises and training in techniques of French-English/English-French translation.
611. MEDIEVAL FRENCH LANGUAGE, LITERATURE AND CIVILIZATION (4). Brief introduction to the history of the French language and the development of Medieval French literature in the light of the history, thought and art of that period.
612. 16TH CENTURY FRENCH LITERATURE AND CIVILIZATION (4). The development of French literature during the 16th century in the light of French history, thought and art of that period.
613. 17TH CENTURY FRENCH LITERATURE AND CIVILIZATION (4). The development of French literature during the 17th century in the light of French history, thought and art of that period.
614. 18TH CENTURY FRENCH LITERATURE AND CIVILIZATION (4). The development of French literature during the 18th century in the light of French history, thought and art of that period.
615. 19TH CENTURY FRENCH LITERATURE AND CIVILIZATION (4). The development of 19th century French literature in the light of French history, thought and art from 1801 to 1870.
616. 19TH AND 20TH CENTURY FRENCH LITERATURE AND CIVILIZATION (4). The development of French literature in the light of French history, thought and art from 1871 to 1914.
617. 20TH CENTURY FRENCH LITERATURE AND CIVILIZATION (4). The development of 20th century literature in the light of French history, thought and art from 1915 to the present.

621. COMMERCIAL AND FINANCIAL INSTITUTIONS IN FRANCE (4). Pr., four 300-level French courses including FR 309 or equivalent. Study of the most important economic agencies, including companies, banks, distribution systems and stock exchanges.
631. THE FRENCH PRESS I (4). Pr., four 300-level French courses or equivalent. Political, intellectual and cultural events in France and the world as reflected in major French daily newspapers. May be repeated for credit.
632. THE FRENCH PRESS II (4). Pr., four 300-level French courses or equivalent. Political, intellectual, social and cultural events in France and the world as reflected in major French periodicals. May be repeated for credit.
633. FRENCH LITERATURE AND CIVILIZATION OUTSIDE CONTINENTAL FRANCE (4). Pr., four 300-level French courses or equivalent. Consideration, analysis and criticism of selected French literature from Africa, the Antilles, Canada and other French-speaking areas.
634. SPECIAL TOPICS IN FRENCH LITERATURE, CULTURE, OR LANGUAGE (4). Special aspects of French literature or culture along with social, political, intellectual issues or an in-depth study of French syntax, morphology or phonetics. The focus will be announced at least one quarter prior to its being scheduled. May be repeated for credit.
635. FRENCH LITERARY GENRES OR THEMES (4). Focus on a particular genre or theme of French literature. The specific subject will be announced at least one quarter prior to its being scheduled. May be repeated for credit.
636. DIRECTED READINGS IN FRENCH LITERATURE (1-4). (CREDIT TO BE ARRANGED.) Offered to give graduate students the opportunity to study in a specialized area under close supervision of an instructor. Registration is by special permission of the advisor and the instructor. May be repeated for credit.
637. RESEARCH METHODS (1). Introduction to the methods of scholarly investigation in literary history and criticism. Emphasis is on practical training in the use of bibliographical resources and in the preparation of formal written presentations of research results.
641. INTRODUCTION TO COLLEGE LEVEL FRENCH INSTRUCTION (1-4). Orientation to French graduate studies, including selection of appropriate field of specialization and type of degree, and/or introduction to college-level French instruction, including critical observation of performance and guidance by designated instructors. This course must be taken every quarter while student is holding a teaching assistantship, but credit may not count toward a degree.
699. RESEARCH AND THESIS. (CREDIT TO BE ARRANGED.)

GERMAN (GR)

- 101-102-103. FIRST YEAR GERMAN I-II-III (5-5-5). LEC. 4, LAB. 2. GR 101 pr. to 102; 102 pr. to 103. Fundamentals of German. Stress on language skills, with emphasis on conversation. Exposure to Germanic civilization.
- 111-112. READING PROFICIENCY IN GERMAN. (3). Pr., GR 111 for 112 or departmental approval. Winter and Spring. Primarily for graduate students, who should consult their advisors for departmental language requirements. GR 112 channels students into their fields of study, e.g., humanities, social sciences and sciences. May not be used to satisfy undergraduate language requirements. S/U grade only.
- 201-202-203. INTERMEDIATE GERMAN I-II-III (4-4-4). Pr., GR 103 or equivalent. GR 201 pr. to 202; 202 pr. to 203. Exceptions to the sequence may be granted by departmental consent or when course offerings so require. Stress on language skills; structural review and composition; readings in German literature and German civilization.
301. BEGINNING GERMAN COMPOSITION AND CONVERSATION (3). Pr., GR 203 or equivalent. Fall. Concentration on writing and speaking skills. Review of selected segments of grammar.
302. INTERMEDIATE GERMAN COMPOSITION AND CONVERSATION (3). Pr., GR 301 or departmental approval. Winter. Further development of writing and speaking skills. Continued review of selected segments of grammar.
303. ADVANCED GERMAN COMPOSITION AND CONVERSATION (3). Pr., GR 302 or departmental approval. Spring. Intensive practice and refinement of writing and speaking skills. Strategies of vocabulary acquisition and retention.
311. CULTURE AND CIVILIZATION I (3). Pr., GR 203. Fall. Social, political and cultural history of Germany from the Germanic tribes to 1918.
312. CULTURE AND CIVILIZATION II (3). Pr., GR 203. Winter. Social, political and cultural history of Germany from 1918 to the present.
313. INTRODUCTION TO LITERATURE (3). Pr., GR 203 or equivalent. Spring. Basic literary genres and major figures in German literature. Familiarization with literary methodologies and bibliographical tools.
314. SEMINAR IN GERMAN LITERATURE (3). Pr., GR 201 or equivalent. Summer. Readings in German literature from selected periods. Normally offered in Summer only.
401. BUSINESS GERMAN (3). Pr., GR 303 or equivalent. Intensive practice in preparing commercial correspondence and reading contracts, agreements and related documents in German. Emphasis will be placed on the acquisition of a business-oriented vocabulary.
402. GERMAN FOR INTERNATIONAL TRADE (3). Pr., GR 401 or equivalent. Practice in handling, preparing and translating international trade correspondence and documents in German. Development of case studies and other realistic international trade group work in German and English, under simulated real-life pressures.
403. SELECTED TOPICS IN GERMAN LITERATURE, LANGUAGE AND CULTURE (3). Pr., four 300-level German courses. May be repeated for credit when topic changes.
404. ADVANCED GERMAN FOR BUSINESS PROFESSIONS (3). Pr., GR 401, 402. Prepares students to take the *Prüfung Wirtschaftsdeutsch International*, a special examination which leads to a certificate recognized by business and industry.

Foreign Languages and Literatures

407. **INDEPENDENT WORK IN GERMAN** (3 or 5 *). Pr., at least one 400-level German course and departmental approval. Directed study in area of special interest for the superior student in German. May be repeated once for credit.
408. **GERMAN CONTINUING CONVERSATION** (1). Pr., four 300-level German courses, including GR 301, 302, 303 or equivalent. Continuing practice in spoken German to maintain and upgrade proficiency while completing other requirements for graduation. May be repeated once for credit, but counted only once toward a major.
409. **GERMAN CONTINUING COMPOSITION** (1). Pr., four 300-level German courses, including GR 301, 302, 303 or equivalent. Continuing practice in written German to maintain and upgrade proficiency while completing other requirements for graduation. May be repeated once for credit, but counted only once toward a major.
411. **GERMAN CLASSICISM** (3). Pr., four 300-level German courses or equivalent. Alternate Fall. Consideration, analysis and criticism of German literary works of the classical period.
412. **GERMAN ROMANTICISM** (3). Pr., four 300-level German courses or equivalent. Alternate Winter. Consideration, analysis and criticism of German Romantic literary works.
413. **GERMAN REALISM AND NATURALISM** (3). Pr., four 300-level German courses or equivalent. Alternate Spring. Consideration, analysis and criticism of German literature of Realism and Naturalism.
421. **GERMAN DRAMA** (3). Pr., four 300-level German courses or equivalent. Alternate Fall. Consideration, analysis and criticism of selected German theater works.
422. **20TH-CENTURY GERMAN LITERATURE** (3). Pr., four 300-level German courses or equivalent. Alternate Winter. Consideration, analysis and criticism of selected German prose prior to 1945.
423. **CONTEMPORARY GERMAN LITERATURE** (3). Pr., four 300-level German courses or equivalent. Alternate Spring. Consideration, analysis and criticism of selected German literary works since 1945.
499. **FOREIGN LANGUAGE INTERNATIONAL TRADE INTERNSHIP IN GERMAN** (1-6). Pr., junior standing and departmental approval. Number of hours and applicability toward major to be determined in consultation with the advisor. May be repeated for a maximum of six credits.

GREEK (GK)

- 101-102-103. **BEGINNING CLASSICAL GREEK I-II-III** (5-5-5). GK 101 or departmental approval pr. for 102; GK 102 or departmental approval pr. for GK 103. Fundamentals of classical Greek.
399. **SPECIAL TOPICS IN GREEK LITERATURE** (1-5). Pr., GK 103 or departmental approval. Advanced readings in classical Greek prose and poetry. May be repeated with change in topics.

ITALIAN (IT)

- 101-102-103. **FIRST YEAR ITALIAN I-II-III** (5-5-5). LEC. 4, LAB. 2. IT 101 pr. to 102; 102 pr. to 103. Fundamentals of Italian. Language skills stressed (comprehension, reading, oral and written communication, grammar). Exposure to Italian culture and civilization.
- 201-202-203. **SECOND YEAR ITALIAN I-II-III** (5-5-5). LEC. 4, LAB. 2. Pr., IT 103 or equivalent. IT 201 pr. to 202; 202 pr. to 203. (Exceptions to this sequence may be granted by departmental consent or when course offerings so require.) Stress on language skills; structural review and composition; readings in Italian literature and exposure to Italian culture and civilization.
275. **INTRODUCTION TO ITALIAN CULTURE** (3). Introduction to Italian culture from Roman times to the present, as reflected in Italy's history, literature, arts and political development. Emphasis on the social, artistic, spiritual and political forces that shaped Italian culture and its contribution to world cultures. Guest lectures.
399. **SPECIAL TOPICS IN ITALIAN** (1-5). Supplementary instruction concurrent with experience in some field of Italian language, literature and culture. Credit evaluation determined by the Italian faculty on the basis of appropriateness and intensity of the activity. A written report or a test is required. May be repeated with change in topics for a maximum of 10 hours.

JAPANESE (JP)

- 101-102-103. **FIRST YEAR JAPANESE I-II-III** (5-5-5). JP 101 pr. for 102; 102 pr. for 103. Fundamentals of Japanese. Stress on language skills, with progressive emphasis on conversation. Exposure to Japanese civilization.
- 201-202-203. **SECOND YEAR JAPANESE I-II-III** (5-5-5). Pr., JP 103 or equivalent. JP 201 pr. to 202; 202 pr. to 203. Stress on language skills; structural review and composition, readings in Japanese literature and exposure to Japanese culture and civilization.

FRENCH (FR) ADVANCED UNDERGRADUATE AND GRADUATE COURSES

521. **FRENCH FOR INTERNATIONAL TRADE** (4). Pr., FR 321 or equivalent. Practice in handling, preparing and translating international trade correspondence, documents and related legal procedures in French. Development of case studies and other international trade group work in French and in English, under simulated real-life pressures.
531. **SEMINAR IN FRENCH LITERARY GENRES AND MOVEMENTS** (4 or 5 *). Pr., four 300-level French courses or equivalent. Selected readings in French literary genres or movements.
532. **SEMINAR IN ADVANCED LANGUAGE SKILLS** (4 or 5 *). Pr., four 300-level French courses or equivalent. Practice in writing and speaking French. Exercises include compositions and exposés. May be repeated for credit.

LATIN (LN)

- 101-102-103. **FIRST YEAR LATIN I-II-III** (5-5-5). LN 101 pr. for 102; LN 102 pr. for LN 103. Fundamentals of Latin; language skills stressed with increasing emphasis on reading, including selections from ancient authors.

Foreign Languages and Literatures

- 201-202-203. SECOND YEAR LATIN I-II-III (5-5-5). Pr., LN 103 or equivalent. LN 201 pr. for 202; LN 202 pr. for 203. Exceptions to this sequence may be granted by departmental consent or when course offerings so require. Review of Latin grammar and syntax and survey of Latin literature through selected readings of authors primarily from the Golden and Silver Ages, 80 B.C. - ca. 140 A.D.
311. READING PROFICIENCY IN LATIN (3). Pr., graduate status and LN 103 or departmental approval. For graduate students. Students should consult their advisors for departmental language requirements before enrolling. Credit cannot be given for both LN 311 and 399 in the same quarter.
399. SPECIAL TOPICS IN LATIN LITERATURE (1-5). Pr., LN 201 or departmental approval. Advanced readings in Latin prose and poetry. Credit evaluation determined by the Classics faculty on the basis of appropriateness and intensity of the activity. Topics will change. May be repeated with change in topics.

PORTUGUESE (PT)

- 101-102-103. FIRST YEAR PORTUGUESE I-II-III (5-5-5). PT 101 pr. to 102; 102 pr. to 103. Fundamentals of Portuguese. Stress on language skills; progressive emphasis on conversation. Exposure to Luso-Brazilian civilization.
- 201-202-203. SECOND YEAR PORTUGUESE I-II-III (5-5-5). Pr., PT 103 or equivalent. PT 201 pr. to 202; 202 pr. to 203. Exceptions to this sequence may be granted by departmental consent or when course offerings so require. Stress on language skills; structural review and composition; readings in Luso-Brazilian literature. Exposure to Luso-Brazilian civilization.

RUSSIAN (RU)

- 101-102-103. FIRST YEAR RUSSIAN I-II-III (5-5-5). RU 101 pr. to 102; 102 pr. to 103. Fundamentals of Russian. Stress on language skills; progressive emphasis on conversation. Exposure to Russian civilization.
- 111-112. BEGINNING RUSSIAN FOR READING COMPREHENSION I-II (3-3). RU 111 or equivalent, pr. to 112. Not open to students who have completed RU 101-103 or above. Exceptions may be granted by departmental consent. Emphasis on acquiring reading skills in Russian. Reading from contemporary Soviet print media.
- 201-202-203. SECOND YEAR RUSSIAN I-II-III (5-5-5). Pr., RU 103 or equivalent. RU 201 pr. to 202; 202 pr. to 203. Exceptions to this sequence may be granted by departmental consent or when course offerings so require. Stress on language skills; structural review and composition. Readings in Russian literature; continued exposure to Russian civilization.
274. INTRODUCTION TO RUSSIAN CULTURE (in English) (5). Intensive exposure to Russian culture from the 10th century to the Revolution, as reflected in the fine arts and literature. Emphasis on geographic, social, artistic, spiritual and political forces in the shaping of Russian culture and its contribution to world cultures. Frequent guest lecturing by faculty from other departments.
275. INTRODUCTION TO SOVIET CULTURE (in English) (5). Intensive introduction to Soviet culture from the Revolution to the present, as reflected in the fine arts and literature. Emphasis on the social, artistic, spiritual and political forces in the shaping of Soviet culture. Frequent guest lecturing by faculty from related departments and programs.
301. RUSSIAN CONVERSATION (3). Pr., RU 203 or equivalent. Practice in spoken Russian, based on reading of literary texts and on situations concerning contemporary life in the Soviet Union.
302. RUSSIAN COMPOSITION (3). Pr., RU 203 or equivalent. Practice in writing letters, brief articles, themes and reports, based on original compositions, literary texts and other topics.
303. RUSSIAN CIVILIZATION (3). Pr., RU 203 or equivalent. Review of the cultural heritage of the Russian language as reflected in literature and folklore.
351. RUSSIAN LITERATURE FROM 1820-1860 IN TRANSLATION (3). Literary history of the period: selected works by Pushkin, Lermontov, Gogol, Goncharov, Turgenev.
352. RUSSIAN LITERATURE FROM 1860-1917 IN TRANSLATION (3). Dostoevsky, Tolstoy, Chekhov.
353. SOVIET RUSSIAN LITERATURE FROM 1917 TO THE PRESENT IN TRANSLATION (3). Analysis and criticism of literary movements and selected writers.
399. SPECIAL TOPICS IN RUSSIAN (1-5). Supplementary instruction concurrent with experience in some field of Russian language, literature and culture. Credit evaluation determined by the Russian faculty on the basis of appropriateness and intensity of the activity. A written report or a test is required. May be repeated for a maximum of 10 hours.

SPANISH (SP)

- 101-102-103. FIRST YEAR SPANISH I-II-III (5-5-5). SP 101 pr. to 102; 102 pr. to 103. Fundamentals of Spanish. Language skills stressed with progressive emphasis on conversation. Exposure to Hispanic civilization.
- 111-112. READING PROFICIENCY IN SPANISH (3). Pr., SP 111 for 112 or departmental approval. Winter, Spring. Primarily for graduate students, who should consult their advisors for departmental language requirements. SP 112 channels students into their field of study, e.g., humanities, social sciences and sciences. May not be used to satisfy undergraduate language requirements. S-U grading only.
- 201-202-203. SECOND YEAR SPANISH I-II-III (4-4-4). Pr., SP 103 or equivalent. SP 201 pr. to 202; 202 pr. to 203. Exceptions to this sequence may be granted by departmental consent or when course offerings so require. Language skills stressed; structural review and composition; reading in Spanish literature; exposure to Hispanic civilization.
301. SPANISH PHONETICS (3). Pr., SP 202 or equivalent. Training in practical phonetics with course materials determined by the needs of the students.

Foreign Languages and Literatures

302. SPANISH SYNTAX (3). Pr., SP 203 or equivalent. Sentence structure in Spanish emphasizing the interrelationship among the various parts.
303. SPANISH CONVERSATION (3 OR 5 *). Pr., SP 301 or equivalent. Intensive practice in the spoken language, with simultaneous review of vocabulary and structure. May be repeated once for credit but counted only once toward a major.
304. SPANISH COMPOSITION (3 OR 5 *). Pr., SP 302 or equivalent. Practice in writing letters, brief articles, themes and reports, based on original composition and translation. May be repeated once for credit but counted only once toward a major.
305. INTRODUCTION TO HISPANIC LITERATURE (3). Pr., SP 303, 304. Literary genres, rhetorical figures and other literary terms to be applied to the analysis of Spanish and Spanish American texts.
307. SPANISH-AMERICAN COMMUNITY DIALOGUE (3). Pr., SP 303 or 304. Practical Spanish for American public safety personnel with emphasis on learning key phrases useful when handling situations involving authoritative infant, cooperation or offering of assistance. Medical and legal terminology including vernacular and idiom variations. Offering Spring, odd years.
309. SEMINAR IN ADVANCED COMPOSITION AND CONVERSATION (3 or 5 *). Pr., SP 303, 304 or equivalent. Summer. Intensive practice in composition and conversation through original and directed themes as well as through oral presentations. May be repeated once for credit.
310. SPANISH CIVILIZATION I (3). Pr., SP 303, 304 or equivalent. Alternate Fall. Intensive exposure to the culture of Spain up to 1700 as reflected in the fine arts and literature. Emphasis on geographic, historical, social, artistic, spiritual and political forces in Spanish civilization and its contribution to world cultures.
311. SPANISH CIVILIZATION II (3). Pr., SP 303, 304 or equivalent. Alternate Winter. Intensive exposure to the culture of Spain from 1700 to 1900, as reflected in the fine arts and literature. Emphasis on geographic, historical, social, artistic, spiritual and political forces in Spanish civilization and its contribution to world cultures.
312. SPANISH CIVILIZATION III (3). Pr., SP 303, 304. Intensive exposure to the culture of Spain from 1900 to the present, as reflected in the fine arts and literature. Emphasis on geographic, historical, social, artistic, spiritual and political forces in Spanish civilization and its contribution to world cultures.
313. SPANISH AMERICAN CIVILIZATION I (3). Pr., SP 303, 304 or equivalent. Alternate Fall. Intensive exposure to the culture of pre-Colombian Spanish America to Independence as reflected in the fine arts and literature. Emphasis on geographic, historical, social, artistic, spiritual and political forces in Spanish American civilization and its contribution to world cultures.
314. SPANISH AMERICAN CIVILIZATION II (3). Pr., SP 303, 304 or equivalent. Alternate Winter. Intensive exposure to the culture of Spanish America from Independence to the 20th century as reflected in the fine arts and literature. Emphasis on geographic, historical, social, artistic, spiritual and political forces in Spanish American civilization and its contribution to world cultures.
315. SPANISH AMERICAN CIVILIZATION III (3). Pr., SP 303, 304 or equivalent. Alternate Spring. Intensive exposure to the culture of contemporary Spanish America as reflected in the fine arts and literature. Emphasis on geographic, historical, social, artistic, spiritual and political forces in Spanish American civilization and its contribution to world cultures.
316. SEMINAR IN HISPANIC CIVILIZATION (3 or 5 **). Pr., SP 303, 304 or equivalent. Summer. An intensive study of an aspect of Hispanic civilization. Students taking the course abroad will also visit sites and museums in the country of residence. May be repeated for credit.
320. BUSINESS SPANISH (3). Pr., SP 303, 304 or equivalent. Intensive practice in commercial terminology in Spanish. Emphasis will be placed on the acquisition of a business-oriented vocabulary.
321. SPANISH FOR INTERNATIONAL TRADE (3). Pr., SP 320 or equivalent. Practice in handling, preparing and translating international trade correspondence and documents in Spanish. Development of case studies and other realistic international trade group work in Spanish.
322. COMMERCIAL SPANISH TRANSLATION (3). Pr., SP 303, 304 or equivalent. Spring. The problems and approaches to commercial translation emphasizing the primary areas in which translations are most used: business letter, export-import documentation and conversation.
401. SEMINAR IN PRACTICAL PHONETICS (3 or 5 *). Pr., SP 301 or 302 or equivalent. Advanced training in practical phonetics with course assignments determined by needs of students. May be repeated once for credit.
408. SPANISH CONTINUING CONVERSATION (1). Pr., SP 301 or 302 or equivalent. Continuing practice in spoken Spanish to maintain and upgrade proficiency while completing other requirements for graduation. May be repeated once for credit.
409. SPANISH CONTINUING COMPOSITION (1). Pr., SP 301 or 302 or equivalent. Continuing practice in written Spanish to maintain and upgrade proficiency while completing other requirements for graduation. May be repeated once for credit, but counted only once toward a major.
410. SURVEY OF SPANISH LITERATURE TO 1700 (3). Pr., SP 305 or equivalent. Alternate Fall. Development of Spanish literature from its beginnings through the Golden Age (1700).
411. SURVEY OF MODERN SPANISH LITERATURE (3). Pr., SP 305 or equivalent. Alternate Winter. Panorama of Spanish literature between 1700 and 1900.
412. SURVEY OF CONTEMPORARY SPANISH LITERATURE (3). Pr., SP 305 or equivalent. Alternate Spring. Panorama of the development of contemporary Spanish literature from the Generation of '98 to the present.
413. SURVEY OF SPANISH AMERICAN LITERATURE I (3). Pr., SP 305 or equivalent. Alternate Fall. Panorama of Spanish American literature from the discovery of America to Modernism.

414. SURVEY OF SPANISH AMERICAN LITERATURE II (3). Pr., SP 305 or equivalent. Panorama of Spanish American literature from Modernism to Vanguardism.
415. SURVEY OF SPANISH AMERICAN LITERATURE III (3). Pr., SP 305 or equivalent. Panorama of Spanish-American literature from Vanguardism to the present.
418. SEMINAR IN HISPANIC LITERATURE (3 or 5 *). Pr., four 300-level Spanish courses or equivalent. Readings in Hispanic literature from selected genres, authors, periods or movements. May be repeated once for credit.
499. INTERNATIONAL TRADE INTERNSHIP IN SPANISH (1-6). Pr., junior standing and departmental approval.

SPANISH COURSES FOR GRADUATE STUDENTS

600. HISTORY OF THE SPANISH LANGUAGE (3). The diachronic study of the development of the Spanish language from its Latin origins to the present.
605. SPANISH LINGUISTICS (3). A synchronic study of the Spanish language focusing on phonology, morphology, syntax and lexicon, taking into consideration dialectal differences.
606. APPLIED SPANISH LINGUISTICS (3). Critical study of the current research done in applied linguistics regarding the acquisition of Spanish by non-native speakers, with emphasis on the problems faced by adult English-speaking individuals.
610. MEDIEVAL SPANISH LITERATURE (3). An introduction to medieval Spanish literature through representative texts from the various genres of the period.
620. 16TH CENTURY SPANISH LITERATURE (3). A critical and historical study of representative literary works in all genres from around 1492 to the end of the 16th century.
625. 17TH CENTURY SPANISH LITERATURE (3). A critical and historical study of representative literary works in all genres in the 17th century with emphasis on Baroque literature.
630. 18TH/19TH CENTURY SPANISH LITERATURE (3). A critical and historical study of representative literary works in all genres in the 18th and 19th centuries.
640. 20TH CENTURY SPANISH LITERATURE (3). A critical and historical study of 20th century Peninsular literature from the Generation of 98 to Spanish post-war literature through representative works in all genres.
645. CONTEMPORARY SPANISH LITERATURE (3). A critical and historical study of contemporary Peninsular literature from the Spanish Civil War to the present through representative works in all genres.
650. COLONIAL SPANISH AMERICAN LITERATURE (3). Representative literary genres and authors of Vice Regal America from Spanish transcriptions of Pre-Columbian works to those just prior to the Wars of Independence.
656. MIDDLE AMERICAN THEATRE (3). Development of middle American theatre (Mexico, Middle American and Spanish-speaking Caribbean countries) in the 19th and 20th centuries with emphasis on the contemporary period. Credit cannot be given for both SP 655 and 656.
657. SOUTH AMERICAN THEATRE (3). Development of South American theatre in the 19th and 20th centuries with emphasis on the contemporary period. Credit cannot be given for both SP 655 and 657.
661. SOUTH AMERICAN POETRY I (3). The development of South American poetry from 1824 (the date in which the liberation of all the Spanish colonies was completed) to the first generation of modernism. Credit cannot be given for both SP 660 and 661.
662. SOUTH AMERICAN POETRY II (3). The development of South American poetry from post-modernism to the present. Credit cannot be given for both SP 660 and 662.
668. SPANISH AMERICAN POSTCOLONIAL PROSE TEXTS TO THE "BOOM" (3). LEC. 3. Representative essayists and fiction writers of the 19th and 20th centuries predating the "Boom." Credit cannot be given for both SP 665 and 668.
669. THE "BOOM" IN SPANISH AMERICAN FICTION (3). Major works of modernist and postmodernist fiction that achieved international acclaim during the second half of the 20th century. Credit cannot be given for both SP 665 and 669.
670. SEMINAR IN SPANISH PROSE (3). An in-depth study of a selected genre, literary movement, or author(s) in Spanish prose. May be repeated for credit and counted towards the degree.
671. SEMINAR IN SPANISH THEATRE (3). An in-depth study of a selected period, movement, or dramatist(s). May be repeated for credit and counted toward the degree.
672. SEMINAR IN SPANISH POETRY (3). An in-depth study of a selected period, movement, or poet(s). May be repeated for credit and counted toward the degree.
675. SEMINAR IN SPANISH AMERICAN PROSE (3). An in-depth study of a selected genre, literary movement, or author(s) in Spanish American prose. May be repeated for credit and counted toward the degree.
676. SEMINAR IN SPANISH AMERICAN THEATRE (3). An in-depth study of one or more playwrights or tendencies of the Spanish American theatre. May be repeated for credit and counted toward the degree.
677. SEMINAR IN SPANISH AMERICAN POETRY (3). An in-depth study of a selected period, movement, or poet(s). May be repeated for credit and counted toward the degree.
678. SEMINAR IN HISPANIC LITERATURE AND/OR CULTURE (3). An analysis of the cultural milieu which influences literary creativity within a given geographical area or historical period. May be repeated for credit and counted toward the degree.
679. SEMINAR IN LINGUISTICS (3). An in-depth analysis of linguistics problems or peculiarities within a certain geographical area or historical period. May be repeated for credit and counted toward the degree.
680. LITERARY CRITICISM (3). Literary criticism and theory as it relates to Spanish and Spanish American literature. May be repeated for credit and counted toward the degree.

Foreign Languages and Literatures

683. SEMINAR IN SPANISH LITERATURE (3). An in-depth study of a selected period, movement, or author(s) from various genres of Spanish literature. May be repeated for credit and counted toward the degree.
684. SEMINAR ON SPANISH LITERATURE—AUBURN ABROAD (3). An in-depth study of a selected period, movement, or author(s) from various genres of Spanish literature. May be repeated for credit and counted toward the degree. Offered only through Auburn University Study Abroad Programs.
687. SEMINAR IN SPANISH AMERICAN LITERATURE (3). An in-depth study of a selected period, movement, or author(s) from the various genres of Latin American literature. May be repeated for credit and counted toward the degree.
688. SEMINAR ON SPANISH AMERICAN LITERATURE—AUBURN ABROAD (3). An in-depth study of a selected period, movement, or author(s) from various genres of Spanish American literature. May be repeated for credit and counted toward the degree. Offered only through Auburn University Study Abroad Programs.
689. SEMINAR ON LINGUISTICS—AUBURN ABROAD (3). An in-depth analysis of linguistics problems or peculiarities within a certain geographical area or historical period. May be repeated for credit and counted toward the degree. Offered only through Auburn University Study Abroad Programs.
691. DIRECTED RESEARCH (1). Study and research in specialized areas under the direct supervision of one faculty member. Registration by permission only. May be repeated twice for credit.
692. INTRODUCTION TO COLLEGE-LEVEL SPANISH INSTRUCTION (1). Instruction for graduate teaching assistants including critical observation in performance and guidance by a designated supervisory professor. Required of all graduate students each quarter in which they hold a graduate teaching assistantship and does not count toward a graduate degree.
693. RESEARCH METHODS (1). An introduction to the methods of scholarly investigation in literary history and criticism. Emphasis is given to practical training in the use of bibliographical sources and in the preparation of research papers. May not be counted toward a graduate degree.
698. SEMINAR ON HISPANIC LITERATURE AND/OR CULTURE — AUBURN ABROAD (3). An analysis of the cultural milieu which influences literary creativity within a given geographical area or historical period. May be repeated for credit and counted toward the degree. Course offered only through Auburn University Study Abroad Programs.
699. RESEARCH AND THESIS. (CREDIT TO BE ARRANGED)

FRENCH (FR) ADVANCED UNDERGRADUATE AND GRADUATE COURSES

521. FRENCH FOR INTERNATIONAL TRADE (4). Pr., FR 321 or equivalent. Practice in handling, preparing and translating international trade correspondence, documents and related legal procedures in French. Development of case studies and other international trade group work in French and in English, under simulated real-life pressures.
531. SEMINAR IN FRENCH LITERARY GENRES AND MOVEMENTS (4 or 5*). Pr., four 300-level French courses or equivalent. Selected readings in French literary genres or movements.
532. SEMINAR IN ADVANCED LANGUAGE SKILLS (4 or 5*). Pr., four 300-level French courses or equivalent. Practice in writing and speaking French. Exercises include compositions and exposés. May be repeated for credit.

SPANISH (SP) ADVANCED UNDERGRADUATE AND GRADUATE COURSES

501. SEMINAR ON CONVERSATION AND PHONETICS (3). Pr., four 300-level Spanish courses or equivalent. May be repeated once for credit, but for no more than six hours total for SP 501 and 511 together. Advanced training in Spanish conversation and phonetics with course materials determined by needs of students.
502. SEMINAR ON COMPOSITION AND STYLISTICS (3). Pr., four 300-level Spanish courses or equivalent. May be repeated once for credit, but for no more than six hours total for SP 502 and 512 together. Advanced training in Spanish composition and stylistics with course materials determined by needs of students.
511. ABROAD SEMINAR ON CONVERSATION AND PHONETICS (3). Pr., four 300-level Spanish courses or equivalent. May be repeated once for credit, but for no more than six hours total for SP 501 and 511 together. Advanced training in Spanish conversation and phonetics with course materials determined by needs of students. Course only offered through Auburn University Study Abroad Programs.
512. ABROAD SEMINAR ON COMPOSITION AND STYLISTICS (3). Pr., four 300-level Spanish courses or equivalent. May be repeated once for credit, but for no more than six hours total for SP 502 and 512 together. Advanced training in Spanish composition and stylistics with course materials determined by needs of students. Course only offered through Auburn University Study Abroad Programs.

COURSES OFFERED ONLY IN AUBURN - ABROAD (FRANCE) (FR)

228. INTERMEDIATE FRENCH CONVERSATION (5). Pr., FR 103 or equivalent or approval of French Advisor. Summer. Intensive practice in the spoken language with simultaneous review of vocabulary and structure. May be repeated once for credit. When combined with FR 229 can count toward the major or minor in lieu of FR 221.
229. INTERMEDIATE FRENCH GRAMMAR AND COMPOSITION (5). Pr., FR 103 or equivalent or approval of French Advisor. Summer. Intensive review of French grammar, with emphasis on problem areas and written practice. May be repeated once for credit. When combined with FR 228 can count toward the major or minor in lieu of FL 221.
353. FRENCH CIVILIZATION (5). Pr., FR 203 or equivalent. Summer. Consideration of selected aspects of French civilization in the light of historical cultural developments.
553. ADVANCED FRENCH CIVILIZATION (5). Pr., four 300-level French courses or equivalent. Summer. An in-depth study of French civilization, with emphasis on historical, political and cultural influences. May be repeated for credit.

COURSES OFFERED ONLY IN AUBURN - ABROAD (GERMANY) (GR)

104. INTENSIVE GERMAN LANGUAGE (5). Summer. Introduction to German. Basic German grammar and conversation. May be substituted for GR 103.
204. INTERMEDIATE GERMAN (5). Pr., GR 103 or equivalent or approval of German Advisor. Summer. Grammar, conversation and reading. Intensive practice in German with simultaneous review of vocabulary and structure. Does not substitute for GR 201, 202 or 203, but may count toward the major or minor in German.
304. GERMAN CONVERSATION (5). Pr., GR 203 or departmental approval. Summer. Practice in spoken, everyday German, based on texts and situations concerning contemporary life in Germany or other German-speaking countries.
306. GERMAN COMPOSITION (5). Pr., GR 203 or departmental approval. Summer. Practice in writing letters, brief articles, themes and reports based on original composition and translation.

COURSES OFFERED IN GERMANY (GR)

211. GERMAN CONVERSATION — GERMANY (5). Pr., GR 253 or equivalent. Practice in spoken everyday German, based on texts and situations concerning contemporary life in Germany or other German-speaking countries.
212. GERMAN COMPOSITION — GERMANY (5). Pr., GR 253 or equivalent. Practice in writing letters, brief articles, themes and reports based on original compositions.
213. MODERN GERMANY — GERMANY (5). Pr. GR 253 or equivalent. Political and economic development of Germany since 1945.
305. ADVANCED CONVERSATION — GERMANY (5). Pr., GR 257 or equivalent. Discussions based on utilization of television news broadcasts and documentaries.
307. ADVANCED COMPOSITION — GERMANY (5). Pr., GR 258 or equivalent. Practice in writing business letters and other forms of business communications.
309. GERMAN CURRENT AFFAIRS — GERMANY (5). Pr., GR 259 or equivalent. Discussions and reports on current affairs using a variety of newspapers and journals.

COURSES OFFERED ONLY IN AUBURN - ABROAD (RUSSIA) (RU)

238. INTERMEDIATE RUSSIAN CONVERSATION (5). Pr., RU 103 or equivalent or departmental approval. Intensive practice in the spoken language with simultaneous review of vocabulary and structure.
316. SEMINAR IN RUSSIAN CIVILIZATION (5). Pr., RU 103 or equivalent or departmental approval. Intensive study of Russian civilization. Students will visit art museums, cultural events and historical sites in Russia.
330. SEMINAR IN BUSINESS RUSSIAN (5). Pr., RU 203 or equivalent. Intensive study of the fundamentals of business-oriented language to enable students to read and prepare commercial documents in Russia.
331. SEMINAR IN TRANSLATION OF TECHNICAL RUSSIAN (5). Pr., RU 203 or equivalent or departmental approval. Familiarizes students with technically-oriented vocabulary and terminology.

COURSES OFFERED ONLY IN AUBURN - ABROAD (SPANISH) (SP)

238. INTERMEDIATE SPANISH CONVERSATION (5*). Pr., SP 103 or equivalent or approval of Spanish Advisor. Summer. Intensive practice in the spoken language with simultaneous review of vocabulary and structure. May be repeated once for credit but counted only once toward the major.
239. INTERMEDIATE SPANISH GRAMMAR AND COMPOSITION (5*). Pr., SP 103 or equivalent or approval of Spanish advisor. Summer. Intensive review of Spanish grammar, with emphasis on problem areas and written practice. May be repeated once for credit but counted only once toward the major.
316. SEMINAR IN SPANISH CIVILIZATION (5*). Pr., SP 303, 304 or equivalent. Summer. Intensive study of Spanish civilization through Spanish art. Students will visit various art museums in Spain. May be repeated for credit.
330. SEMINAR IN BUSINESS SPANISH (3-5*). Pr., SP 303, 304 or equivalent. Summer. Intensive study of the specialized spoken and written business terminology of Spanish. Emphasis on practical usage through direct contact with the Hispanic business environment. May be taken as substitution for SP 320, with consent of advisor.
331. SEMINAR IN SPANISH FOR INTERNATIONAL TRADE (3-5*). Pr., SP 320 or 330 or equivalent. Summer. Intensive study in handling, preparing and translating international trade correspondence and documents in Spanish. Emphasis on practical applications through direct contact with the Hispanic business environment. May be taken as substitution for SP 321, with consent of advisor.

Forest Engineering (FYE)

Professors Thompson and Turnquist

Associate Professors Brinker, Lanford, Taylor, Tufts and Wilhoit

Affiliate Associate Professor Stokes

Affiliate Assistant Professors McDonald and Rummer

101. INTRODUCTION TO AGRICULTURAL AND FOREST ENGINEERING (1). LEC. 1, LAB. 2. S/U graded. Winter. Perspectives on the agricultural and forest engineering profession. Creative design and the engineer's approach to problem solving. Introduction to the technical specialties of engineering for agriculture and forestry and career opportunities. (Same as AN 101).
130. INTRODUCTION TO ENGINEERING DESIGN FOR FOREST SYSTEMS. (1). LAB. 3. Spring. Supervised engineering project to design components and/or systems to solve a real problem in an agricultural or forestry related industry. Open only to students classified 01 or 02. (Same as AN 130).

201. ENGINEERING PRINCIPLES IN FOREST SYSTEMS (5). LEC. 4, LAB. 3. Pr., MH 161. Coreq., CSE 120, Fall. Engineering concepts and principles applied to agricultural and forest problems. Creativity and design. Unit operations of agricultural and forest engineering. (Same as AN 201).
300. INTRODUCTION TO FORESTRY OPERATIONS (2). LAB. 6. Pr., BI 102, MH 169. Summer. Introduction to basic field and manufacturing operations in the forest industry.
304. FOREST SURVEYING (5). LAB. 15. Pr., MH 162 or 169. Summer. Basic concepts and procedures of surveying as applied to forestry.
311. MOBILE EQUIPMENT DESIGN FUNDAMENTALS (4). LEC. 3, LAB. 3. Pr., EGR 201, 235, MH 265 and AN/FYE 201 or departmental approval. Winter. Basic engineering analysis, synthesis and design concepts applied to mobile field equipment and machines for agricultural, forestry and industrial use. Includes engine performance, power transmission, traction mechanics, mechanics of machines and machine-operator interface and safety. (Same as AN 311).
313. LAND AND WATER CONSERVATION ENGINEERING (3). LEC. 2, LAB. 3. Pr., AN/FYE 315. Spring. Rain-fall-runoff relationships. Soil erosion and its prediction and control. Hydraulic structures and open channel flow. (Same as AN 313).
315. PROCESS ENGINEERING FOR FOREST SYSTEMS (5). LEC. 4, LAB. 3. Pr., AN/FYE 201, CE 310, EGR 201. Winter. Design principles and equipment selection for processing and manufacturing products from materials of plant and animal origin. Fluid handling systems, pump and fan selection, materials handling, drying, properties of materials, thermal and storage processes. (Same as AN 315).
370. FOREST ROADS DESIGN (3). LEC. 2, LAB. 3. Pr., FYE 304. Winter. Design, construction and maintenance of secondary and temporary road systems. Not open to engineering students.
401. FOREST MACHINE DESIGN (3). LEC. 3. Pr., AN/FYE 311, EGR 207. Spring. Engineering analysis and design of forest machinery. Includes engineering characteristics of logs related to machine design, site preparation and planting equipment review, felling equipment design, loader kinematics, cable systems mechanics and machine reliability (Same as AN 401).
402. FOREST TRANSPORTATION SYSTEMS DESIGN (3). LEC. 2, LAB. 3. Pr., FYE 304, 313. Fall. Design of the forest transportation system including pre-construction planning, horizontal and vertical alignment, earthwork volume and distribution analysis and drainage control structures for the road network and specifications for the vehicles that will use the network. (Same as AN 402).
403. APPLIED STRUCTURAL ANALYSIS AND DESIGN (3). LEC. 2, LAB. 3. Pr., EGR 207. Fall. Analysis and design of structural systems of agriculture and forestry. (Same as AN 403).
430. ENGINEERING DESIGN FOR FOREST SYSTEMS I (4). LEC. 3, LAB. 3. Pr., AN/FYE 403, senior standing, departmental approval. Winter. Design of equipment, structures and systems for food, feed, fiber, forest products and animal production and processing utilizing engineering principles. (Same as AN 430).
490. SPECIAL TOPICS (2-5). (CREDIT TO BE ARRANGED.) Pr., departmental approval. May be taken more than one quarter for a maximum of 10 quarter hours. (Same as AN 490).
491. HONORS READING AND SPECIAL TOPICS (3-6). Pr., admission to University Honors Program; junior or senior standing. May be repeated for a maximum of six hours. Open only to students in the Honors Program with the consent of the Honors Program Advisor. Topics of an undergraduate nature pertaining to forest engineering.
492. HONORS THESIS (1-6). Pr., admission to University Honors Program; junior or senior standing. May be repeated for a maximum of six hours. Open only to students in the Honors Program with the consent of the Honors Program Advisor. Directed research and writing of honors thesis.

ADVANCED UNDERGRADUATE AND GRADUATE

509. HYDRAULIC CONTROL SYSTEMS (4). LEC. 3, LAB. 3. Pr., CE 310 or ME 340. Fall. Design and analysis of hydraulic systems. Application of sizing hydraulic pumps, motors, valves and accessories for industrial and mobile systems. Laboratory emphasizes hands-on testing and functional analysis of components and systems, including measurement of pressure, flow and power. (Same as AN 509).
530. ENGINEERING DESIGN FOR FOREST SYSTEMS II (4). LEC. 2, LAB. 6. Pr., AN/FYE 430 and departmental approval. Spring. A supervised engineering design project to design components and/or systems to solve a real problem in an appropriate industry. Utilization of many engineering principles is required. (Same as AN 530).
570. HARVESTING (3). LEC. 2, LAB. 3. Pr., FY 319, 540 or School approval. Coreq., FYE 523, FY 541. Spring. Harvesting systems, cost analysis, safety management and environmental impacts.
571. ADVANCED HARVESTING (2). LEC. 2. Pr., FYE 570 or departmental approval. Spring. Analysis of harvesting systems with attention to solutions of problems in harvesting.
572. ENGINEERING DESIGN OF FOREST HARVESTING SYSTEMS (4). LEC. 3, LAB. 3. Pr., FYE 401, 402, FY 540. Spring. Design of optimal forest harvest systems from component machines. Emphasizes methods of data collection and analysis, model development and optimization. Topics include: linear regression; queuing theory; simulation; system balance; cost and productivity of components and systems.
590. SPECIAL TOPICS (CREDIT TO BE ARRANGED.) (2-5). Pr., departmental approval. May be taken more than one quarter for a maximum of 10 quarter hours. (Same as AN 590).

COURSES FOR GRADUATE STUDENTS

690. SPECIAL TOPICS (CREDIT TO BE ARRANGED.) (2-5). Pr., School approval. May be taken more than one quarter for a maximum of 10 quarter hours. (Same as AN 690.)

Forest Products (FP)

Professors Biblis and Tang

Associate Professors Carino and Elder

Affiliate Professors Conner and Soltis

Affiliate Associate Professors Price and Hse

339. INTRODUCTION TO WOOD SCIENCE (3). LEC. 2, LAB. 3. Pr., FY 310. Fall. The manufacture of lumber, plywood, paper and various composition boards from wood. Modern production technologies used in forest products industries. Identification of important products and woods.
420. FOREST PRODUCTS I (4). LEC. 3, LAB. 3. Pr., FP 339. Fall. Manufacture and proper use of solid wood products, primarily lumber.
474. WOOD GLUING AND COATING (3). LEC. 2, LAB. 3. Pr., FP 475. Winter. Types and characteristics of adhesives and wood coating materials. Use of adhesives and wood coating materials in primary and secondary wood products manufacture operations.
475. WOOD-BASED PANEL TECHNOLOGY (3). LEC. 2, LAB. 3. Pr., FP 339. Spring. Design, manufacture, properties and application of plywood, particle-board, fiberboard and composite panels.
478. INTRODUCTION OF WOOD CHEMISTRY (4). LEC. 3, LAB. 3. Pr., CH 203, FP 311. Winter. Chemical composition of wood, chemical analyses of wood components and their derivatives and utilization. Energy from wood and forest residues.
496. DIRECTED STUDY (1-5). Pr., departmental approval and junior standing. Maximum of 10 hours in all areas as credit toward the Bachelor of Science degree. Areas of study are: (A) Wood Anatomy and Quality, (B) Uses of Wood-Derived Products, (C) Chemistry of Wood and Derived Products, (D) Timber Physics, (E) Physical Properties of Wood, (F) Chemical Properties of Wood, (G) Mechanical Properties of Wood and (H) Processing of Forest Products.

ADVANCED UNDERGRADUATE AND GRADUATE

521. FOREST PRODUCTS II (4). LEC. 3, LAB. 3. Pr., FP 420. Winter. Manufacture and proper use of veneer and particle based panel products and other composite products. Several extended field trips required.
532. WOOD DRYING AND PRESERVATION (3). LEC. 2, LAB. 3. Pr., FP 339 and 420. Winter. Physical principles of kiln drying of wood, industry drying technologies, drying defects and prevention. Biological deterioration of wood and wood products, wood preservatives and industrial treating processes of wood products. Field trips required.
533. WOOD DRYING PROCESSES (3). LEC. 2, LAB. 3. Pr., FP 525. Winter. Physical principles of kiln drying, industry drying methods and procedures, drying defects and prevention.
535. FOREST PRODUCTS PRODUCTION MANAGEMENT (4). LEC. 3, LAB. 3. Pr., FP 339, 420. Fall. Application of economic-engineering principles to manufacturing solid wood products. Problem solving as related to economic decision making in forest products industry.
536. FOREST PRODUCTS MARKETING (3). LEC. 3. Pr., FP 330, FP 475. Winter. Historical and current analyses of forest products marketing at manufacturing, wholesale and retail level. Applications of marketing systems to forest products industries.
537. POLLUTION PROBLEMS IN THE FOREST INDUSTRY (3). LEC. 3. Senior standing. Spring. Causes and control of pollution problems associated with forest industries. Air, water, noise and solid-waste problems are identified during the conversion of wood and forest residues into forest products and energy. Topics from industrial members.
550. MODERN SAWMILL TECHNOLOGY AND OPERATIONS MANAGEMENT (3). Pr., FP 420. Fall. Design, operation and management of sawmills with emphasis on computer-aided processing and decision-making in small-log sawing.

COURSES FOR GRADUATE STUDENTS

601. ADVANCED WOOD CHEMISTRY (5). LEC. 3, LAB. 6. Pr., FP 478 or School approval. Spring. Detailed study of the physical and chemical nature of cellulose and modified cellulose and their derivatives. Study of the lignocellulose complex. The chemical analysis of wood.
603. PHYSICS OF WOOD AND WOOD COMPOSITES (4). LEC. 4. Pr., FP 525 or School approval. Fall. Theory of permeability and transport in wood. Hygrothermophysics of wood and its composites. Acoustics of timber and wood composite structures and piezoelectric properties of wood.
604. MECHANICS OF WOOD AND WOOD COMPOSITES (4). LEC. 4. Pr., EGR 207, FP 420, 521, 531 or School approval. Spring. Micro- and macro-mechanical behavior of wood and its composites. Stress-strain relationships in wood fibers and wood composites. Phenomena of fracture and fatigue in wood and its composites.
606. ADVANCED FOREST PRODUCTS PRODUCTION MANAGEMENT AND CONTROL (4). LAB. 3, LEC. 3. Pr., FP 535. Fall. Mathematical models in operational research, with applications to problems in forest products industries such as manufacturing processes, production control, inventory analysis and decisions analysis.
607. MOLECULAR MODELLING (3). LEC. 2, LAB. 3. Pr., School approval. Winter. Current methods in molecular modelling, including graphical display of chemical structures, conformational search procedures, force-field calculations, molecular orbital calculations, molecular dynamics or graphical display of structural and numerical results.
692. SPECIAL PROBLEMS (3-8). Areas of study defined in FP 696. A special problem in forest products/wood science. Such a problem will be of lesser magnitude than thesis but will test the student's ability to do thorough library research as well as any needed laboratory or field work and to prepare a comprehensive report on his/her findings. This work may be spread over more than one quarter, but will be limited to a total of eight quarter hours.

Forestry

696. DIRECTED STUDY (1-5). Directed study limited to five hours in any specified area and to a maximum of 15 hours in all areas as credit toward the Master of Forestry or Master of Science degree. Areas of Directed Study: (A) Wood Anatomy and Quality, (B) Uses of Wood Derived Products, (C) Chemistry of Wood & Derived Products, (D) Timber Physics, (E) Physical Properties of Wood, (F) Chemical Properties of Wood, (G) Mechanical Properties of Wood and (H) Processing of Forest Products.
699. RESEARCH AND THESIS. (CREDIT TO BE ARRANGED.) May be taken more than one quarter.
792. SPECIAL PROBLEMS (3-8). Areas of study defined in FP 796. A special problem in forest products/wood science. Such a problem will be of lesser magnitude than thesis but will test the student's ability to do thorough library research as well as any needed laboratory or field work and to prepare a comprehensive report on his/her findings. This work may be spread over more than one quarter, but will be limited to a total of eight quarter hours.
796. DIRECTED STUDY (3-8). Directed study limited to five hours in any specified area and to a maximum of 15 hours in all areas as credit toward the Doctor of Philosophy degree. Areas of Directed Study: (A) Wood Anatomy and Quality, (B) Uses of Wood Derived Products, (C) Chemistry of Wood & Derived Products, (D) Timber Physics, (E) Physical Properties of Wood, (F) Chemical Properties of Wood, (G) Mechanical Properties of Wood and (H) Processing of Forest Products.
799. RESEARCH AND DISSERTATION. May be taken more than one quarter.

Forestry (FY)**

Professors Thompson, Bengtson, Gjerstad, Lockaby, Raper and South
Associate Professors Bliss, Chappelka, Flick, Glover, Golden, McNabb, Somers and Teeter
Assistant Professors Davis, Dubois, Enebak, Flynn, MacKenzie,
Meldahl, Samuelson and Zhang
Affiliate Professors Farrar, Mexal, Rogers and Sizemore
Affiliate Associate Professors Abt, Boring, Boyer, Carter, Caulfield, Jones, Kirkman,
McKee, McMahon,
Michael, Miller, Mitchell, Stanturf and Thornton
Affiliate Assistant Professors Burke, Duzan, Nicholas, Starkey, Trettin, Warren and Wigley

** Prerequisites may be waived by departmental approval concerned, for junior and senior students in other departments.

200. INTRODUCTION TO FORESTRY AND FOREST PRODUCTS (3). LEC. 3. Historic development of forestry and forest products professions, career opportunities and current technical, social and economic issues influencing forestry and forest products.
302. INTRODUCTION TO FOREST BIOLOGY (2). LAB. 6. Pr., BI 102, MH 169. Summer. Introduction to biological principles as used in management of forest properties. Emphasis on ecology.
305. FIELD MENSURATION (4). LAB. 12. Pr., CSE 100, MH 169. Summer. Basic concepts and procedures for measuring trees and stands, units of measure used in forestry; application of log rules and volume tables; condition class mapping; elementary timber estimating.
306. INTRODUCTION TO FOREST MANAGEMENT (2). LAB. 6. Pr., BI 102, MH 169. Summer. Introduction to basic forest management, including concepts of multiple use.
310. DENDROLOGY (4). LEC. 2, LAB. 6. Pr., BI 102 or School approval. Coreq., FY 320. Fall. Taxonomy and identification of important forest plants of the U.S., including cover types of forest regions. A weekend field trip is required. Students are expected to bear costs of food and lodging for the field trip.
318. FOREST MEASUREMENTS I (4). LEC. 2, LAB. 6. Pr., FY 305, FYE 304, DMS 215 or School approval. Coreq., FY 310. Fall. Theoretical concepts of tree and log measurements, development of volume tables, sampling theory and design.
319. FOREST MEASUREMENTS II (5). LEC. 3, LAB. 6. Pr., FY 318 or School approval. Coreq., FY 540. Winter. Factors affecting and mathematical principles of tree volume and stand growth.
320. FOREST TREE PHYSIOLOGY (3). LEC. 3. Pr., CH 104, FY 302, PS 200. Coreq., FY 310, 311 or School approval. Fall. Relationship between environmental and genetic factors. Metabolism and growth of individual trees.
323. FOREST ECOLOGY (3). LEC. 2, LAB. 3. Pr., AY 305, FY 318, 320 or School approval. Winter. Basic concepts and principles of forest ecology including forest community-environment relationships.
344. ENVIRONMENTAL LAW (4). Pr., junior standing. Winter. Federal, state and local law on conservation and regulation of environmental matters.
350. FORESTRY FOR WOODLAND OWNERS (5). LEC. 5. Pr., sophomore standing. (Not open to students in Forestry curricula.) Understanding trees and their value in our economy. The application of forestry principles to management of small woodlands.
400. FORESTRY TOUR (1-3). LAB. (2-9). Tours up to two weeks long to points of outstanding interest to foresters. May be taken more than once if different tours are involved.
444. FOREST FIRE CONTROL AND USE (2). LEC. 1, LAB. 3. Pr., FY 323 or departmental approval. Winter. Use of fire in land management and protection of forests from wildfire.
460. WILDLAND RECREATION PHILOSOPHY AND POLICY (3). LEC. 3. Pr., senior standing. Spring. Philosophy and policy of wildland recreation. Laws and traditions at federal, state and local levels of government, as well as, industrial and other landowners' outlooks. Developments relative to wildland recreation.

463. FOREST RECREATION PLANNING AND MANAGEMENT (2). LEC. 2. Pr., FY 302, 306 or departmental approval. Spring. Planning for and management of lands which can provide recreational opportunity for people.
482. WOOD PROCUREMENT (2). LAB. 4. Pr., FY 541 or departmental approval. Spring. Principles, problems and practices involved in providing raw material to the forest products industry.
483. INDUSTRIAL WOOD PROCUREMENT PRACTICUM (1). LAB. 3. Pr., FY 305. Coreq., FY 319. Spring. Field and office procedures and strategies involved in purchasing wood for an industrial forestry firm. Course may be taken twice for credit. S/U grading only.
485. FOREST MANAGEMENT PRACTICUM (3). LEC. 1, LAB. 6. Pr., FY 541. Definition, analysis and solution of forestry problems. Requires integration of previously learned forestry material in an economic decision making framework.
491. HONORS READINGS AND SPECIAL TOPICS (3-6). Pr., admission to the University Honors Program, junior or senior standing. May be repeated for a maximum of six hours. Open only to students in the University Honors Program with consent of the Honors Program Advisor. Topics of an undergraduate nature pertinent to forestry.
492. HONORS THESIS (1-6). Pr., admission to the University Honors Program, junior or senior standing. May be repeated for a maximum of six hours. Open only to students in the University Honors Program with consent of the Honors Program Advisor. Individual student endeavor consisting of directed research and writing of honors thesis.
496. DIRECTED STUDY (1-5 EACH). Pr., departmental approval and junior standing. Maximum of 10 hours in all areas as credit toward the Bachelor of Science degree. Areas of study are: (A) Tree Physiology, (B) Forest Soils, (C) Forest Ecology, (D) Community Ecology, (E) Landscape Ecology, (F) Forest Pathology, (G) Integrated Forest Protection, (H) Forest Regeneration, (I) Silviculture, (J) Tropical Forestry, (K) Forest Sampling, (L) Forest Mensuration, (M) Regression Analysis, (N) Forest Modeling, (O) Remote Sensing, (P) Geographic Information Systems, (Q) Forest Management, (R) Forest Economics, (S) Forest Policy, (T) Environmental Law and Policy, (U) Social Dimensions of Forestry, (V) Wood Procurement and (W) Forest Engineering.
499. HONORS PROJECT (2-5). Senior standing. A problem in the student's area of interest. Will test ability to do thorough library research, field work, data analysis or other tasks related to high level independent work.

ADVANCED UNDERGRADUATE AND GRADUATE

523. SILVICULTURE (4). LEC. 3, LAB. 3. Pr., FY 323 or junior standing and School approval. Coreq., FY 541, FYE 570. Spring. Methods of controlling establishment, composition, growth and quality of forest stands. Application of ecological principles to manipulation of forest ecosystems to meet specific objectives.
524. FOREST WATERSHED MANAGEMENT (2). LEC. 2. Pr., FY 323 or senior standing and School approval. Winter. A survey of forest hydrology as a specialized branch of ecology. The use of forests and forestry practices for the regulation of streamflow.
525. ARTIFICIAL FOREST REGENERATION (3). LEC. 2, LAB. 3. Pr., FY 523 or School approval. Winter. Presentation and discussion of current problems and practices involved in establishment of forest plantations in the Southern U.S. Principles of nursery management, tree improvement, seedling symbiology, seedling establishment, vegetation management and site interactions.
526. INTEGRATED FOREST PEST MANAGEMENT (4). LEC. 3, LAB. 1. Pr., ENT/PLP 215, FY 310. Fall. Principles of integrated management of insects and fungi the attack commercially-important forest and shade trees. Pertinent aspects of biology and ecology of selected pests will be presented. Computer modeling for pest management is stressed.
540. FOREST ECONOMICS (4). LEC. 3, LAB. 3. Pr., EC 301 or School approval. Coreq., FY 319. Winter. Marginal analysis applied to forestry. Investment theory and forestry decisions. Theories of resource supply and economics of conservation. Structure and performance of forest products markets. Principles and influence of taxation in forestry. The U.S. as a component of the world forest economy.
541. FOREST MANAGEMENT AND ADMINISTRATION (4). LEC. 3, LAB. 3. Pr., FY 540 or School approval. Coreq., FY 523, FYE 570. Spring. Quantitative approaches to decision-making in forestry. Models for forest regulation, multiple objective planning and other selective forestry problems. Decision-making in private and public forestry firms/agencies. The administration of large forestry programs and the influence of outside regulations. Relies heavily on previous forestry courses.
542. FOREST POLICY (3). LEC. 3. Pr., FY 540 or School approval. Spring. Historical review of U.S. forest policy. Analysis of social and resource characteristics that have shaped policy issues/decisions at regional and national levels.
548. ADVANCED FOREST ECONOMICS (3). LEC. 3. Pr., FY 540. Winter. Input-output relationships in forest production. Computation of financial maturity of trees and stands. Competition for resources in the management of forest properties. Uses of land and evaluation of intangible values associated with land.
565. URBAN FORESTRY (4). LEC. 3, LAB. 3. Pr., BI 102, FY 310 or HF 222, or equivalent. Winter. Principles and concepts of tree establishment, management and maintenance in an urban environment. Development of a management plan.
590. SEMINAR IN FORESTRY (1). Pr., senior standing. Synthesis of advanced current literature and recent developments, with written and verbal reports on selected problems.
593. PRACTICUM (1-5). May be repeated not to exceed 10 hours credit. Not open to majors in Forestry curricula. Provides experience in Forestry relating theory and practice, usually carried out simultaneously.

COURSES FOR GRADUATE STUDENTS

611. ADVANCED FOREST SOILS (3). LEC. 2, LAB. 3. Pr., AY 304 or 305. Fall, even years. Fundamental and applied concepts of forest soil processes that relate to productivity and other forest functions. Emphasis is on nutrition of individual trees and biochemistry of forest communities and ecosystems.

612. COLLOQUIUM IN FOREST BIOLOGY (2). LEC. 2. Pr., School approval. Winter, even years. Advanced examination of basic biological concepts in physiology, pathology, ecology and biotechnology and to develop a thorough understanding of their influence in modern forestry science. Requires extensive library research and detailed written and oral presentations by class members.
613. FOREST COMMUNITY INVESTIGATIONS (5). LEC. 3, LAB. 6. Pr., FY 323 or BY 513 or School approval. Spring, alternate years. Methods for analysis and description of forest communities; multivariate techniques for classification and ordination of forest ecosystems. A weekend field trip is required.
614. FOREST NURSERY MANAGEMENT (4). LEC. 3. Pr., FY 320, 525 or advanced graduate standing. Winter, odd years. Principles of seedling growth and development as applied to forest nursery management. Study and evaluation of activities to improve the outplanting performance of southern pine seedlings. Two field trips.
615. ADVANCED STUDIES ON EFFECTS OF AIR POLLUTION (5). LEC. 5. Pr., FY 320, 323 or School approval. Winter, even years. Concepts of woody plant responses to air pollutants. Emphasis on pollutant sources, transport, mechanisms of toxicity, methodologies used and ecosystem and global effects.
616. COMMUNITY ECOLOGY (5). LEC. 4, LAB. 4. Winter. Concepts and theories with examples from both plant and animal communities. Methods for posing, testing and evaluating community ecology hypotheses.
617. ECOPHYSIOLOGY OF FOREST TREES (3). Pr., minimum of four 300-level or above science courses in BY, CH, HF or AY. Study of interaction among the environment, silvicultural practices, physiological mechanisms and tree growth. Integration of root, shoot and foliar functions and leaf, tree and stand level processes.
621. ADVANCED FOREST BIOMETRICS (3). LEC. 3. Pr., FY 319, DMS 601 or equivalent. Winter, odd years. Theory and methods for estimation and modelling of forest characteristics and dynamics, development and use of site quality models and examination of forest sampling and inventory systems.
641. FOUNDATIONS OF ENVIRONMENTAL LAW (4). Pr., EC 202, AEC 202, or School approval. Winter. Foundation concepts in property, contract and tort law necessary for understanding modern environmental control. Emphasis and examples deal with natural resources – water, forests, minerals and wildlife. Relationships between legal doctrine and characteristics of market economy.
642. ENVIRONMENTAL LAW AND POLICY (4). Pr., FY 641 or AEC 509 and AEC 307 or School approval. Spring. Theory of environmental control. Principles of administrative law applied in environmental problems. Survey of important environmental legislation: National Environmental Policy Act, Endangered Species Act, National Forest Management Act, Clean Water Act and Clean Air Act. Case studies in the application of environmental legislation.
644. FOREST FINANCE AND INVESTMENT (3). LEC. 3. M.F. or School approval. Fall. Principles of corporate and real estate finance as applied to commercial timberland and the place of this asset class in individual and institutional portfolios.
645. ADVANCED FOREST ECONOMICS I (3). LEC. 3. M.F. or School approval. Winter. Special production functions in forestry; forest resource cost and supply models; demand for forest products; market forms in forest products markets; conduct and performance of forest products industries, including productivity and price trends; labor problems.
646. ADVANCED FOREST ECONOMICS II (3). LEC. 3. Pr., EC 601 and 556 or School approval. Spring. Evolution of the role of economics in forestry, policy analysis methods, methods for valuing non-market forest products, regional analysis, international trade in forest products.
648. ADVANCED FOREST POLICY (3). LEC. 3. Pr., FY 541. Policy process and players involved, theory and evolution of property rights, theory of state, public choice theory, policy analysis. Programs and statutory laws related to forestry. Forest policy in an international context.
651. RESEARCH METHODS IN FORESTRY (3). LEC. 3. Forestry majors only. Spring. Overview of the scientific method and its application in forestry/natural resources research. Evaluation and preparation of project proposals with emphasis on the components of research quality and the development of written communication skills.
685. URBAN FORESTRY SEMINAR (1). Pr., graduate standing. Winter. Presentation and discussion of research, scientific papers and issues related to urban forest establishment, care and planning.
690. GRADUATE SEMINAR (1). Pr., graduate standing. Fall. Presentation and discussion of advanced topics in forest management, forest engineering and forest products.
692. SPECIAL PROBLEMS (3-8). Areas of study defined as in FY 596. A special problem in forestry or wood utilization. Such a problem will be of lesser magnitude than a thesis but will test the student's ability to do thorough library research as well as any needed laboratory or field work and to prepare a comprehensive report on his/her findings. This work may be spread over more than one quarter, but shall be limited to a total of eight quarter hours.
696. DIRECTED STUDY (1-5). Directed Study limited to a maximum of five hours in any specified area and to a maximum of 15 hours in all areas as credit toward the Master of Science or Master of Forestry degrees. Areas of Directed Study: (A) Tree Physiology, (B) Forest Soils, (C) Forest Ecology, (D) Community Ecology, (E) Landscape Ecology, (F) Forest Pathology, (G) Integrated Forest Protection, (H) Forest Regeneration, (I) Silviculture, (J) Tropical Forestry, (K) Forest Sampling, (L) Forest Mensuration, (M) Regression Analysis, (N) Forest Modeling, (O) Remote Sensing, (P) Geographic Information Systems, (Q) Forest Management, (R) Forest Economics, (S) Forest Policy, (T) Environmental Law and Policy, (U) Social Dimensions of Forestry, (V) Wood Procurement and (W) Forest Engineering.
698. MASTER OF FORESTRY PAPER. (CREDIT TO BE ARRANGED.) May be taken more than one quarter.
699. RESEARCH AND THESIS. (CREDIT TO BE ARRANGED.) May be taken more than one quarter.

792. SPECIAL PROBLEMS (3-8). Areas of study defined as in FY 796. A special problem in forestry or wood utilization. Such a problem will be of lesser magnitude than a thesis but will test the student's ability to do thorough library research as well as any needed laboratory or field work and to prepare a comprehensive report on his/her findings. This work may be spread over more than one quarter, but shall be limited to a total of eight quarter hours.
796. DIRECTED STUDY (1-5). Directed Study limited to a maximum of five hours in any specified area and to a maximum of 15 hours in all areas as credit toward the Doctor of Philosophy degree. Areas of Directed Study: (A) Tree Physiology, (B) Forest Soils, (C) Forest Ecology, (D) Community Ecology, (E) Landscape Ecology, (F) Forest Pathology, (G) Integrated Forest Protection, (H) Forest Regeneration, (I) Silviculture, (J) Tropical Forestry, (K) Forest Sampling, (L) Forest Mensuration, (M) Regression Analysis, (N) Forest Modeling, (O) Remote Sensing, (P) Geographic Information Systems, (Q) Forest Management, (R) Forest Economics, (S) Forest Policy, (T) Environmental Law and Policy, (U) Social Dimensions of Forestry, (V) Wood Procurement and (W) Forest Engineering.
799. RESEARCH AND DISSERTATION. (CREDIT TO BE ARRANGED.) May be taken more than one quarter.

Geography (GY)

Professor Dawsey, *Chair*, and Martinson

Associate Professor Perritt

Assistant Professors Icenogle, Masucci and Organ

102. WORLD GEOGRAPHY (5). Important characteristics of the land and people of the major regions of the world.
214. INTRODUCTION TO PHYSICAL GEOGRAPHY (5). Selected elements of the earth's physical system to include such items as landforms, basic weather elements, soils and vegetation.
215. INTRODUCTION TO HUMAN GEOGRAPHY (5). An introduction to the various subfields of human/cultural geography, including population, agricultural geography, linguistic geography, the geography of religion, ethnic geography and economic and urban geography.
223. FIELD GEOGRAPHY (5). Field mapping, data gathering, sampling procedures, interviewing and research design in physical geography and human geography.
240. INTRODUCTORY CARTOGRAPHY (5). Cartographic technology, spatial data manipulation and generalization and cartographic production and reproduction.
300. CLIMATOLOGY (5). Pr., 10 hours GY or departmental approval. Climate elements, controls and world patterns.
302. ECONOMIC GEOGRAPHY — COMMODITY PRODUCTION (5). Pr., five hours GY or departmental approval. Distribution and environmental relationships of man's principal economic activities.
303. THE FORMER SOVIET UNION — LAND AND PEOPLE (5). Survey of the physical environment and cultural development of the region. Natural resources, economic activities, social patterns, political processes, problems and prospects of the former Soviet Union.
304. LATIN AMERICA — LAND AND PEOPLE (3). Survey of the physical environment and cultural development of the region. Natural resources, economic activities, social patterns, political processes, problems and prospects of the major Latin American countries.
305. THE UNITED STATES AND CANADA — LAND AND PEOPLE (3). Survey of the region incorporating physical and cultural elements which provide a synthesis of the economic and political processes, developments and prospects for the United States and Canada.
306. EUROPE — LAND AND PEOPLE (3). Regional analysis of Europe from a systematic viewpoint, including among others the physical environment, population distribution, religion, politics and economics. Selected nations will be used for case studies within their regional setting and to illustrate Europe's global relationships.
307. ASIA (3). Introduces students to the regional geography of Asia and provides an analysis of the area including an examination of its physical bases and history of development. Also considered are geographical patterns related to resources, political conditions, economic activity and population, with a focus on the major countries.
308. AFRICA — LAND AND PEOPLE (5). Survey of the physical and cultural geography of Africa with emphasis placed on the regions and countries of greater economic and international importance.
313. AGRO-CLIMATOLOGY. (5). Pr., 10 hours GY or departmental approval. Principles of climatology that are significant for agriculture, with focus on the Southeastern United States.
315. ALABAMA — LAND AND PEOPLE (3). Survey of the physical environment and cultural development of the state. Natural resources, economic activities, social patterns, problems and prospects of the state in its regional setting will be covered.
320. INTERNATIONAL TRAVEL AND TOURISM (3). Environmental and cultural patterns related to tourism, with specific country examples.
325. GEOGRAPHY FORUM (3). Topics from departmental speakers series.
360. LOCATION ANALYSIS (5). Focus on fundamentals of classical location theory as the basis for understanding geographical underpinnings of theories of economics development and critique of classical theoretical approaches based on the dynamics of industrial and social organizations.
399. INDEPENDENT READINGS IN GEOGRAPHY (1-6). May be repeated for a maximum of six hours credit. No more than five hours may be taken at one time. Directed readings and reports on topic approved by professor in charge.

400. SEMINAR IN GEOGRAPHY (5). Pr., 20 hours GY or departmental approval. Development of modern geographic thinking with attention to applied research topics, including use of Geographic Information Systems technology in applied research, gender and social theory and ethics in planning and resource management.
401. THE GEOGRAPHY OF INTERNATIONAL RELATIONS (5). General elective. The interaction between the natural-physical environment and the international activities of world powers. Emphasis on the changing geographic and economic patterns in world affairs.
440. ADVANCED CARTOGRAPHY (5). Pr., GY 240, five hours GY or departmental approval. Develops understanding of theories and practices of modern cartography.
499. GEOGRAPHY APPRENTICESHIP (5). Pr., 10 hours GY or departmental approval. Matches capable geography students with faculty undertaking research projects to provide them with practical experience in geographical research. No more than 10 credits may be earned in GY 499 and 599.

ADVANCED UNDERGRADUATE AND GRADUATE

500. RESEARCH TECHNIQUES (5). Pr., 25 hours GY or departmental approval. To develop effective thinking skills, to evaluate written materials in geography, to review geographical research, to produce written reports and papers related to geographical themes and issues.
504. GEOGRAPHY OF ENVIRONMENTAL MANAGEMENT (5). Pr., 10 hours GY or departmental approval. Policies and methods to foster environmentally sustainable resource development.
505. INTERNATIONAL DEVELOPMENT (5). Pr., 10 hours of GY or departmental approval. Interrelationships among people, cultures and the physical environment in the process of world development.
507. GLOBAL RESOURCES AND ENVIRONMENT (5). Pr., 10 hours GY or departmental approval. Survey of global environmental issues and problems and review of the latest international mechanisms for improvement of world resource management.
510. PROBLEMS OF THE SOUTHEAST (5). Pr., 10 hours GY or departmental approval. Significant spatial characteristics and relationships of the region's human and physical environment.
520. URBAN GEOGRAPHY (5). Pr., 10 hours GY. Social and material processes and conditions related to urban environments contributing to contemporary theories, images and changes of urban structure.
530. NATURAL RESOURCES PLANNING (5). Pr., 10 hours GY or departmental approval. Evaluation and current practice of resource management in the U.S. with emphasis on water resources and river basin management. Focus on principles of multiple objective resource evaluation and project design.
540. LAND USE, VALUES, PERCEPTIONS AND MANAGEMENT (5). Pr., 10 hours GY or PA 102 or departmental approval. Foundation in ethical, perceptual and values systems associated with use of land and ownership related to development and planning in the U.S. as a basis for evaluating current resource management practices.
550. AGRICULTURAL GEOGRAPHY (5). Pr., 20 hours GY or departmental approval. Geographical approaches to agriculture and influences of the physical environment and human factors on agricultural patterns.
570. INTERPRETATION OF AERIAL PHOTOGRAPHY AND REMOTE SENSING IMAGERY (5). Pr., 20 hours GY or departmental approval. Aerial photo and satellite digital image interpretation, remote sensing technology and photogrammetry.
580. GEOGRAPHIC INFORMATION SYSTEMS (5). Pr., 20 hours GY or departmental approval. Provides students with no previous experience with an understanding of the basic concepts of computerized geographic information systems (GIS).
591. INTERNSHIP/FIELD EXPERIENCE PREPARATION (5). Preparation for study abroad and foreign internship to be taken prior to special overseas programs.
598. FOREIGN INTERNSHIP (5-15). Pr., GY 591 or departmental approval. Offers credit for students engaged in internships abroad. S/U grading only.
599. INTERNSHIP (5). Pr., 20 hours GY or departmental approval. Offers credit for geography students engaged in internships. Department permission required. S/U grading only.

COURSES FOR GRADUATE STUDENTS

600. SEMINAR IN CULTURAL GEOGRAPHY (5). Pr., graduate standing or departmental approval. For intensive study and analysis of selected themes within the broad field of cultural geography.
650. SEMINAR IN GEOGRAPHY (5-10). Pr., graduate standing or departmental approval. For students engaged in intensive study and analysis of problems in geography.

Geology (GL)

Professors Cook, *Head*, King, Saunders and Savrda
Alumni Professor Gastaldo
Associate Professors Lawis and Steltenpohl
Assistant Professors Hames, Lee and Wolf

105. GEOLOGY OF THE NATIONAL PARKS (3). LEC. 3. Fall. Examination and discussion of the geologic processes responsible for the unique characteristics of selected national parks based on their description as "Geologic features worthy of preservation and protection" by the U.S. Department of the Interior.
106. GEOLOGY OF OUR SOLAR SYSTEM (3). LEC. 3. Spring. Examination of our sun and its planets from the geologist's perspective by the use of recently acquired data from manned and unmanned sample-return missions, remote geochemical and geophysical experiments and remotely-sensed photogeology.

110. PHYSICAL GEOLOGY (5). LEC. 4, LAB. 2. General physical geology. Survey of the important minerals and rocks with emphasis on the processes that effect their formation and destruction. Origin and classification of geologic structures. Not open to students having credit in GL 315.
111. HISTORICAL GEOLOGY (5). LEC. 4, LAB. 2. Pr., GL 110. Physical and biological history of the Earth, with emphasis on the evolution of life forms.
206. INVERTEBRATE PALEOZOLOGY (5). LEC. 4, LAB. 2. Pr., BI 103, sophomore standing. Winter. Morphology, classification and significance of selected genera representative of the diversity of fossil invertebrates, including microscopic fossils.
210. ENVIRONMENTAL GEOLOGY (5). LEC. 4, LAB. 2. Pr., GL 110, 315 or departmental approval. Emphasis on geology as an environmental science, applied geology, geological hazards and environmental regulations as applied to geologic environmental remediation.
215. GEOLOGICAL FIELD METHODS (6). LAB. 12. Pr., GL 240. Summer. Instruments and methods used in geological field mapping. Final report required.
231. INDEPENDENT GEOLOGICAL MAPPING (2). LAB. 5. Coreq., GL 215, sophomore standing. Independent mapping project of limited extent done with the consent and under the direction of a faculty member. A geological map and report must be completed, summarizing the investigation of the area chosen.
240. STRUCTURAL GEOLOGY (5). LEC. 3, LAB. 4. Pr., GL 110 or 315. Spring. Fundamentals of rock deformation. The mechanics of rock flow, fracture and folding. Geometric techniques of structural analysis.
301. MINERALOGY (5). LEC. 4, LAB. 2. Pr., CH 103, junior standing. Fall. Introduction to crystal chemistry and crystallography. Systematic study of representatives of important metallic and non-metallic mineral groups.
302. OPTICAL MINERALOGY (5). LEC. 4, LAB. 2. Pr., GL 301, junior standing. Winter. Theory and application of polarized light optics as applied to mineral identification, with emphasis on rock-forming silicate minerals in thin sections.
305. IGNEOUS AND METAMORPHIC PETROLOGY (5). LEC. 4, LAB. 2. Pr., GL 302 and CH 105, junior standing. Spring. Principles and processes of intrusive and extrusive igneous activity and metamorphism. Description and classification of igneous and metamorphic rocks.
310. PALEOBOTANY (5). LEC. 4, LAB. 2. Pr., BI 102, junior standing. Fall. Taphonomic processes responsible for the generation of plant-bearing lithologies, hydrocarbon accumulating systems, biostratigraphic assemblages, paleoecological restorations of the Phanerozoic and evolution of plant groups.
315. ENGINEERING GEOLOGY (4). LEC. 3, LAB. 2. Pr., junior standing. Fundamental geological principles, materials and features that affect engineering projects and programs. Emphasis on pre-construction geological analysis in recognition of potential construction and post-construction hazards and problems. Not open to students having credit in GL 110.
401. SEDIMENTARY PETROLOGY (5). LEC. 4, LAB. 2. Pr., GL 302 and CH 105, junior standing. Fall. Detailed description and classification of sedimentary rocks, with emphasis on the processes of sediment transportation, deposition and diagenesis in marine and non-marine environments.
411. STRATIGRAPHY (5). LEC. 4, LAB. 2. Pr., GL 205, 206, 240 and 401, junior standing. Winter. Descriptive geology pertaining to the discrimination, character, thickness, sequence, age and correlation of rocks. Particular emphasis on field study of stratified rocks.
421. ECONOMIC GEOLOGY (5). LEC. 4, LAB. 2. Pr., GL 240, 305 and 401, junior standing. Spring. The origin, distribution and classification of mineral deposits formed by igneous, metamorphic and sedimentary (or secondary) processes. Introduction of methods of exploration and development.
426. INTRODUCTION TO GEOCHEMISTRY (3). LEC. 3. Pr., CH 105, GL 103. Winter. Principles governing distribution of chemical elements related to igneous, metamorphic and sedimentary processes; progressive differentiation of Earth; and surficial weathering of Earth's crust.
430. GEODYNAMICS (5). LEC. 3, FIELD TRIPS. Pr., GL 240, MH 161, PS 205. Structure and dynamics of the earth deduced from seismology, gravity, heat flow and magnetism.
431. RESEARCH METHODS AND APPLICATION (1-4). Pr., senior majoring in geology and/or consent of departmental faculty upon receipt of acceptable proposal. Active participation in a phase of original research under supervision of a senior investigator. Credit evaluation determined by the departmental faculty on the basis of the formal presentation of the problem and the probable method(s) of investigation. May be taken more than one quarter for a maximum cumulative credit of four credit hours.
470. HONORS THESIS (3-6). Pr., enrollment in the University Honors Program. May incorporate library, field or laboratory research in any proportion. Research project and credit-hour value shall be agreed upon by the student and directing faculty member prior to enrollment. Written thesis and thesis defense required. May be repeated once for a maximum of six hours credit.
480. DIRECTED STUDY (1-3). Pr., departmental approval. Directed studies in areas of geology not covered by an existing course or to supplement knowledge gained from an existing course. May incorporate literature and/or laboratory research in any proportion. The subject matter and credit hour value shall be agreed upon by the student and directing faculty member prior to enrollment. A written report is required. May be taken more than one quarter.

The following courses are available during Summer Quarters at the Dauphin Island, Alabama, Sea Laboratory and at the Gulf Coast Research Laboratory, Ocean Springs, MS. Application forms must be obtained from the Department of Geology during final registration for the Winter Quarter preceding intended attendance.

COURSES AT DAUPHIN ISLAND SEA LABORATORY

120. MARINE TECHNICAL METHODS I (3). LAB. 8. Pr., departmental approval. Summer. Introduction to instruments and procedures utilized aboard marine research vessels, including physical, biological and geological measurements and sampling techniques.
121. MARINE TECHNICAL METHODS II (3). LAB. 8. Pr., departmental approval. Summer. Introduction to laboratory methods associated with chemical parameters of "nutrient analysis." Shipboard and practical skills developed.
202. INTRODUCTORY MARINE GEOLOGY (6). LEC. 4, LAB. AND FIELD 4. Pr., Physical Geology and departmental approval. Summer. Sedimentary environments, seafloor topography and history of ocean basins. Sampling and laboratory techniques and relationship of biota to sediment substrate.
501. RECENT MARINE SEDIMENTATION (6). LEC. 4, LAB. 4. Pr., GL 202 or ZY 201 or ZY 330 or departmental approval. Summer. Properties of marine sediments, coastal environments, continental margins, reefs and the deep sea. Monitoring and measuring of shoreline changes.
502. PROBLEMS IN MARINE PALEOECOLOGY (6). LEC. 4, LAB. 4. Pr., GL 110 and GL 206 or departmental approval. September Preterm, alternate years. Survey of principal Mesozoic and Cenozoic marine fossil groups, their paleoecology and paleogeography.
503. COASTAL GEOMORPHOLOGY (3). LEC. 3. Pr., departmental approval. Introduction to coastal sediment processes and applied coastal geomorphology with emphasis on waves, tides, sediments and their interaction including the impact of anthropogenic influences.

COURSES AT GULF COAST RESEARCH LABORATORY

440. PHYSICAL MARINE GEOLOGY (5). LEC. 2, LAB. 5. Pr., consent of departmental advisor, junior standing. Summer. Introduction to physical processes resulting in the coastal morphology of Mississippi Sound, emphasizing erosional and depositional effects of waves and currents. Various environmental types (deltas, estuaries, etc.) and their characteristics are studied. Identification of ancient shorelines and ancient environments.
441. CHEMICAL MARINE GEOLOGY (5). LEC. 2, LAB. 5. Pr., consent of departmental advisor, junior standing. Summer. Overview of the chemical systems in the oceans, with emphasis on near-shore marine and estuarine environments. Basic analytical methods currently used to study the marine environment, with a strong concentration on instrumental methods of analyzing natural waters and sediments. Supervised research on chemical systems in the local estuaries, Mississippi Sound and offshore.

ADVANCED UNDERGRADUATE AND GRADUATE

500. MICROCOMPUTER APPLICATIONS IN GEOLOGY (2). LEC. 2. Pr., departmental approval. Introduction to the utilization of commercially available and public domain software pertinent to solving geological problems. Does not satisfy computer language requirement for B.S. or M.S. degree in geology.
505. PRINCIPLES OF ANALYTICAL GEOCHEMISTRY (3). LEC. 2, LAB. 2. Pr., GL 302 or departmental approval. Fall. Basic principles of x-ray diffraction/fluorescence and atomic absorption spectrophotometry, neutron activation will be discussed. Emphasis will be on the utilization of these techniques in the analysis of geological materials.
510. HYDROGEOLOGY (5). LEC. 4, LAB. 2. Pr., CH 105, MH 163, PS 207. Fundamentals of groundwater flow in porous media, hydrodynamic dispersion, determination of aquifer properties and geological aspects of groundwater occurrences.
520. GROUNDWATER GEOCHEMISTRY (3). LEC. 3. Pr., CH 316 or departmental approval. Chemical principles applied to the understanding of factors controlling groundwater composition, with an emphasis on water-mineral reactions. Introduction to chemical equilibrium computer modeling programs.
540. PRINCIPLES OF EARTH SCIENCE (5). LEC. 3, LAB. 4. Summer. Special course in earth science for in-service and future teachers only. Encompasses internal surficial geology, meteorology and oceanography. Stresses theory and applications and includes indoor and field laboratories. Not open to undergraduates with credit in GL 101, 102 or 110. GL 540 is not a substitute for those courses.
550. SEDIMENTARY DEPOSITIONAL SYSTEMS (4). LEC. 3, LAB. 2. Pr., GL 401 and 411 or equivalents. Fall. Systematic study of sedimentology and facies stratigraphy of modern and ancient depositional systems; terrigenous-detrital and carbonate depositional environments; analysis of current literature and field work.
560. APPLIED GEOPHYSICS (5). LEC. 4, LAB 2. Pr., GL 110 or 315; MH 161. Coreq., PS 207. Overview of geophysical methods with applications to resource, tectonic and environmental analyses. Seismic refraction and reflection, gravity and magnetics; electrical and electromagnetic methods will be included. Covers aspects of data acquisition, experiment design and data interpretation.

COURSES FOR GRADUATE STUDENTS

600. PRINCIPLES OF GEOCHEMISTRY (5). LEC. 3, LAB. 4. Pr., CH 105, MH 163. Fundamentals of chemical concepts as applied to geologic processes and solution of geologic problems. Survey of origin and distribution of elements in the solid earth. Lab emphasizes problems related to student's research and/or interests.
605. ADVANCED PALEOBOTANY (4). LEC. 2, LAB. 4. Pr., GL 205 or departmental approval. Process oriented course to examine the development of plant-bearing and plant-generated organic-rich sediments of modern and ancient depositional environments. Modern analog studies will be used as a basis for interpreting ancient plant-bearing lithologies. Two 3-day field laboratories are required.
606. MICROPALEONTOLOGY (5). LEC. 3, LAB. 4. Pr., BI 103, GL 111 or departmental approval. Morphology, classification and biostratigraphic use of microfossil groups, including foraminifera, ostracodes and conodonts. Laboratory emphasis on collection, preparation and systematics of microfossils.

Graduate School

610. **ADVANCED STRUCTURAL GEOLOGY (4).** LEC. 3, LAB. 2, Pr., GL 302. Application of analytical techniques to microscopic, mesoscopic and megascopic deformational features of rocks. Lab emphasis on solution of local problems.
615. **DELTAIC PROCESSES (3).** LEC. 2, 1 FIELD TRIP. Pr., GL 401. Introduction to inorganic and organic sedimentological processes in deltaic deposystems. Developmental processes will be surveyed in major deltaic regimes of the world as a basis for assessment of ancient delta systems. One 3-day field trip required.
621. **GROUND-WATER CHEMICAL MODELING (3).** LEC. 3, PR., GL 520. Use of chemical equilibrium computer modeling programs to interpret natural ground-water chemical evolution processes.
625. **GROUNDWATER HYDROGEOLOGIC MODELING (5).** Pr., GL 510. Overview of groundwater modeling techniques with environmental and geologic applications. Interaction of geology and subsurface groundwater flow. Basin hydrology modeling. Practical experience in computer simulations of subsurface hydrogeologic processes.
640. **SPECIAL TOPICS IN ECONOMIC GEOLOGY (4).** LEC. 3, LAB. 2, Pr., GL 421 or departmental approval. The practical and theoretical aspects of economic geology as applied to exploration and development of natural resources, particularly fuels, base metals and precious metals. Emphasis on case histories, preparation of maps and reports and the analysis of drill-recovered, geochemical and geophysical data.
641. **COAL TECHNOLOGY (5).** LEC. 4, LAB. 2, Pr., GL 110 or departmental approval. Introduction to origin, occurrence, exploration, development and beneficiation of coal. Emphasis on coal petrology as applied to rank, maceral and utilization parameters.
650. **ADVANCED STRATIGRAPHY (4).** LEC. 3, LAB. 2, Pr., GL 411. In-depth study of classical, paleontological, and/or physical stratigraphy. Emphasis on current research topics, techniques and field work.
655. **ADVANCED GEOPHYSICS (4).** Treatment of geophysical methods, data interpretation and modeling. Emphasis on delineating subsurface structures, understanding physical processes and systems and determining physical properties through data interpretation. Applications to resource development and environmental assessments will be explored with focus on seismic methods.
660. **IGNEOUS PETROLOGY (4).** LEC. 3, LAB. 2, Pr., GL 305. Classification of igneous rocks. Origin, composition and properties of magmas. Genesis of the major igneous rock associations. Petrochemistry.
661. **SEDIMENTOLOGY AND SEDIMENTARY PETROLOGY (5).** LEC. 4, LAB. 2, Pr., GL 401 (or 501) and 411. Selected readings, lectures and group discussion of significant papers of processes on sedimentation and diagenesis. Emphasis on interpreting depositional and post-depositional history of specific rocks. Analytical techniques and microscopic analysis of evaporites, carbonates and clastics.
662. **METAMORPHIC PETROLOGY (4).** LEC. 3, LAB. 2, Pr., GL 305. Metamorphic zones, facies and reactions. Application of experimental data to metamorphic rock genesis. Selected metamorphic rocks in the southern Piedmont.
670. **SEMINAR I - SOUTHEASTERN GEOLOGY (1).** Reports and discussion covering general topics of regional geologic interest, as well as, geologic problems unique to the Southeastern U.S. Emphasis on geologic history, economic, structural and stratigraphic topics.
671. **SEMINAR II - GEOPHYSICAL FRAMEWORK OF THE U.S. (1).** Reports and discussion on the theory and uses of seismic, magnetic and electrical exploration techniques.
672. **SEMINAR III - GEOTECTONICS (1).** Reports and discussion on the principles, patterns and classification of tectonic phenomena.
680. **DIRECTED STUDIES/ READINGS (1-4).** PR., departmental approval. Directed studies or readings in subject matter not covered by, or to supplement knowledge gained from, an existing course. The study may incorporate literature, field, and/or laboratory research in any proportion. Subject matter and credit-hour value for course shall be determined by student and directing faculty member prior to enrollment. A maximum of 4 credit hours may be taken toward meeting minimum M.S. degree requirements in geology. (A) Applied Stratigraphy (Ground Water), (B) Advanced Stratigraphic Investigations, (C) Paleogeology, (D) Topics in Evolution, (E) Actualistic Paleontology, (F) Ichthyology, (G) Fine-Grained Sediments and Paleocyanography, (H) Economic Geology, (I) Exploration Geology, (J) Isotope Geochemistry, (K) Trace-Element Geochemistry, (L) Structure and Tectonics, (M) Computer Applications to Structure and Tectonics, (X) Unspecified.
699. **RESEARCH AND THESIS (Var.).** Pr., acceptance of thesis research proposal. May be taken more than one quarter.

Graduate School (GS)

000. **CLEARING REGISTRATION (0).** May be used to register graduate students to graduate who have finished all graduation requirements by the last day of the previous quarter. Also, may be used by students to remove an incomplete grade or, by non-thesis students, to take the comprehensive examinations.
600. **INTERDEPARTMENTAL SEMINAR (4).** Pr., EDL 665. For M.A.C.T. students.
601. **TEACHING INTERNSHIP (0).** The M.A.C.T. student will register for this course during the quarter of participation in the M.A.C.T. teaching internship.
690. **THESIS COMPLETION (0).** Coreq. Minimum of one hour of 699. Restricted to thesis-option graduate students for a maximum of four quarters. Students may not enroll for any additional didactic work but must be engaged full time in the completion of thesis research or the thesis. No grade.
700. **AU/AUM JOINT PROGRAM IN PUBLIC ADMINISTRATION (0).** AU registration for 09 PUB students who are registered concurrently at AUM.

Health and Human Performance

790. DISSERTATION COMPLETION (0). Coreq. Minimum of one hour of 799. Restricted to doctoral students for a maximum of four quarters. Students may not enroll in any additional didactic work but must be engaged full time in the completion of dissertation research or the dissertation. No grade.

Health Administration (HA)

(Department of Political Science)

Associate Professors Burns, *Director*, and Ford

Assistant Professor McEldowney

320. HEALTH POLICY (5). Pr., PO 209 or 210. The health policy system; political issues affecting health services.
360. INTRODUCTION TO HEALTH ADMINISTRATION (5). Pr., HA 320 or departmental approval, plus CSE 100. Basic concepts and principles of administration of health services organizations.
361. LEGAL STRUCTURE OF HEALTH ADMINISTRATION (3). Pr., HA 360. Legal processes and aspects affecting the work of administrators of hospitals and other health services organizations.
370. HEALTH ADMINISTRATION AND COMMUNITY (3). Pr., HA 360, SOC 220. Use of epidemiological methods in analysis of community resources, resource allocation, program implementation and general health administration. Development of strategies for effective community relations by health administrators.
450. INTERNSHIP (10). Pr., HA 360, HSA or HSM major and junior standing. (S/U grading only). Practical administrative experience in health services organizations as arranged and approved by the HA Program.
451. INTERNSHIP READING COURSE (5). Coreq., concurrent enrollment in HA 450. Independent readings in administration of health services organizations as approved by instructor.
500. DEVELOPING HEALTH CARE ORGANIZATIONS (3). Pr., HA 360 or graduate standing and departmental approval. Organizational strategies for effective interfacing of medical, nursing, allied health and administrative staff with patient needs.
510. FINANCE IN HEALTH ADMINISTRATION (3). Pr., HA 360 or graduate standing and departmental approval. Reimbursement structures, regulatory mechanisms, cost control and related factors affecting administration of health services organizations.
530. HEALTH ADMINISTRATION AND REGULATION (3). Pr., HA 360 or graduate standing and departmental approval. Government regulatory programs affecting administration of health services organizations.
531. HEALTH ADMINISTRATION AND TECHNOLOGY (3). Pr., HA 360 or graduate standing and departmental approval. Effects of developments in modern technology on administration of health services organizations.
532. HEALTH ADMINISTRATION AND LONG-TERM CARE (3). Pr., HA 360 or graduate standing and departmental approval. Political and administrative issues in administration of long-term care organizations.
539. TOPICS IN HEALTH ADMINISTRATION (1-5). Pr., HA 360 or graduate standing and departmental approval. Analysis of problems in health administration. May be repeated for a maximum of 10 hours credit.
550. SPECIAL PROBLEMS IN HEALTH ADMINISTRATION (1-5). Pr., HA 360 or graduate standing and departmental approval. Qualified students conduct systematic investigation of selected problems in administration of health services under supervision of instructor. May be repeated for a maximum of 10 hours credit.

Health and Human Performance (HHP)

Professors Wilson, *Head*, Fischman and Reeve

Alumni Professor Gladden

Associate Professors Blessing, Pascoe, Rudisill and Wang

Assistant Professors Daniels, Hastie, Newkirk, Rosen, Sanders and Waldrop

Instructors Henken and Matthews

The purpose of the Department of Health and Human Performance is for students to develop the basic and applied principles underlying optimal health, maximum physical performance, the appropriate use of leisure time and how to deliver this information in a school or non-school setting. Specifically, in response to societal needs and trends, the Department prepares students to become teachers of physical education (N-12) and non-school professionals in Health Promotion and Exercise Science.

PHYSICAL EDUCATION – GENERAL PROGRAM (PE)

Physical Education Requirements: Refer to School or program requirements.

Credit. All 100- and 200- level PE courses carry two hours credit per quarter and 300-level courses carry one hour credit. (Maximum of six quarter hours allowed on degree.) No student may receive credit for a course in which the person has previously earned credit.

Students may not register for a beginning level course after having earned credit in the sport or dance area on an advanced level. Credit cannot be earned for a 200- and a 300-level course in the same sport.

To audit, students must secure approval of department head or director of physical education general program.

PHYSICAL EDUCATION SERVICE COURSES (PE)

101. PHYSICAL FITNESS: SELF APPRAISAL (2). Understanding the relationship of human movement to body efficiency, aesthetics and health; self-appraisal; development of a personal plan for achieving and maintaining physical condition; selection of a personal program of developmental and recreational activities.
102. SWIMMING FOR THE NON-SWIMMER (2). Knowledge and skill in aquatics which are developed to a level sufficient to support a recreational interest and to assure one's own safety and the safety of others in and around water.
103. INDIVIDUALIZED AQUATICS (2). Provides water therapy, an understanding of adaptive movements and aquatic skills.
107. SPORTS AND DANCE IN AMERICAN CULTURE (2). (ATYPICAL).
114. SPECIAL FITNESS RELATED TOPIC (2). Additional fee may be charged by cooperating agency.
115. ADAPTED PHYSICAL EDUCATION (2). Concerned with the improvement and correction of physiological and anatomical remedial defects.
116. WEIGHT CONTROL (2). Caloric intake-output, nutrition and the development of desirable exercise and nutritional habits. Activities selected according to individual needs and limitations. Open to students with health classifications, "A" and "B."
117. AEROBIC DANCE (2).
125. BASKETBALL (2).
127. SOCCER-SPEEDBALL (2).
130. JOGGING (2).
131. FENCING (2).
132. WRESTLING (2).
134. JUDO (2).
135. WEIGHT TRAINING (2).
136. TRACK (2).
137. HANDBALL (2).
138. RACQUETBALL (2).
140. GYMNASTICS (2). Understanding of gymnastics and skill in the use of different apparatus.
141. TRAMPOLINE (2).
142. TUMBLING (2).
144. MODERN DANCE (2). An understanding of dance as an art form.
145. MODERN DANCE II (2). Pr., PE 144 or equivalent.
146. TAP DANCE (2).
147. BALLET (2). Fundamentals and terminology of classical ballet.
148. BALLET II (2). Pr., PE 147 or equivalent.
149. JAZZ DANCE (2). Pr., departmental approval.
150. INTERMEDIATE SWIMMING (2). Pr., departmental approval.
151. SPECIAL RECREATIONAL TOPIC (2). Additional fee may be charged by cooperating agency.
152. SWIMMING FOR FITNESS (2). Pr., PE 150 or equivalent. Physical conditioning through water exercises and swimming.
153. SPRINGBOARD DIVING (2). Pr., departmental approval. Instruction in the basic dives; front, back, inward, reverse and twist.
154. RECREATIONAL SPORTS AND ACTIVITIES (2). Survey of selected recreational pursuits such as billiards, croquet, darts, gym bowling, hiking, horseshoes, net games and shuffleboard.
155. ANGLING (2). Skills in bait and fly casting. Selection and care of tackle.
156. ARCHERY (2).
157. BADMINTON (2).
158. BOWLING (2). Additional fee payable to cooperating agency.
159. GOLF (2). Additional fee payable to cooperating agency.
163. TENNIS (2).
165. CAMPING (2). Understanding of American heritage in relation to the out-of-doors, camping trends, conservation and the development of camping skills.
166. FAMILY RECREATION (2). Leisure time activities suitable for the family.
168. BASIC EQUITATION (2). Additional fee payable to cooperating agency.
170. FOLK DANCE (2).
172. SOCIAL DANCE (2). Mixers, as well as ballroom dances: foxtrot, waltz, rhumba, tango and other representative Latin dances.
180. SOFTBALL (2).
181. VOLLEYBALL (2).
230. LIFE GUARD TRAINING (2). Pr., ARC Standard First Aid or equivalent certifications. Development of skills leading to certification in American Red Cross Lifeguard Training.

- 231. SKIN DIVING (2). Pr., departmental approval. Underwater swimming includes selection and use of swim fins, mask, snorkel. Underwater physiology and safety are emphasized.
- 234. JUDO II (2). Pr., PE 134 or equivalent.
- 235. WEIGHT TRAINING II (2). Pr., PE 135 or equivalent.
- 238. RACQUETBALL II (2). Pr., PE 138 or equivalent.
- 250. SYNCHRONIZED SWIMMING (2). Pr., departmental approval.
- 259. GOLF II (2). Pr., PE 159 or equivalent. Additional fee payable to cooperating agency.
- 263. TENNIS II (2). Pr., PE 163 or equivalent.

VARSITY (PE)

- 325. VARSITY BASKETBALL (1).
- 326. VARSITY FOOTBALL (1).
- 332. VARSITY WRESTLING (1).
- 336. VARSITY TRACK (1).
- 337. VARSITY CROSS COUNTRY (1).
- 340. VARSITY GYMNASTICS (1).
- 350. VARSITY SWIMMING (1).
- 359. VARSITY GOLF (1).
- 362. VARSITY RIFLERY (1). Pr., signed Army form 131.
- 363. VARSITY TENNIS (1).
- 379. VARSITY SOFTBALL (1).
- 380. VARSITY BASEBALL (1).
- 381. VARSITY VOLLEYBALL (1).
- 383. VARSITY SOCCER (1).
- 385. VARSITY SOFTBALL (1).

HEALTH AND HUMAN PERFORMANCE (HHP)

- 100. FUNDAMENTALS OF MOVEMENT (3). Framework for human movement that allows for effective delivery of motor skills instruction by the physical education teacher.
- 102. ORIENTATION FOR TRANSFER STUDENTS (1).
- 118. SKILLS AND CONCEPTS OF INDIVIDUAL AND DUAL ACTIVITIES I (3). LAB. 6. Track and Field, archery, golf, wrestling and other individual and dual activities.
- 119. SKILLS AND CONCEPTS OF INDIVIDUAL AND DUAL ACTIVITIES II (3). LAB. 6. Tennis, badminton, racquetball, squash and handball.
- 120. SKILLS AND CONCEPTS OF GYMNASTICS (3). LAB. 6. Tumbling, trampoline and apparatus.
- 121. SKILLS AND CONCEPTS OF AQUATICS (2). LAB. 4. Strokes, survival swimming techniques, competitive swimming, springboard diving and other aquatic activities.
- 122. SKILLS AND CONCEPTS OF TEAM SPORTS I (3). LAB. 6. Basketball, volleyball and other indoor team sports.
- 123. SKILLS AND CONCEPTS OF DANCE (3). LAB. 6. Contemporary, folk, square, tap and ethnic dance.
- 124. SKILLS AND CONCEPTS OF TEAM SPORTS II (2). LAB. 4. Soccer, speedball, field hockey and related outdoor team sports.
- 195. HEALTH SCIENCE (2). Basic understanding of sound health practices and protection. Physical, mental and social aspects of personal and community health are considered.
- 200. THEORY AND CONDUCT OF PHYSICAL ACTIVITIES (5). LEC. 3, LAB. 4. Organizing and administering individual and dual sports, team sports, gymnastics and dance at education and competitive levels.
- 201. FOUNDATIONS OF HEALTH AND HUMAN PERFORMANCE (5). Historical background of the fields of sports, physical education and health.
- 202. BASKETBALL (3). LEC. 2, LAB. 2. Fundamental skill techniques of basketball – offense, defense and strategy.
- 203. BASEBALL (3). LEC. 2, LAB. 2. Offensive and defensive strategy, pitching, catching, infielding, outfielding, batting and baserunning.
- 204. TRACK AND FIELD (3). LEC. 2, LAB. 2. Fundamental skills and techniques of track and field athletics. The organizing and conducting of track meets.
- 206. FOOTBALL (3). LEC. 2, LAB. 2. Fundamentals of football and the different types of offense, defensive team strategy and generalship.
- 211. MOTOR DEVELOPMENT (3). LEC. 2, LAB. 2. Develops understandings and skills concerning the broad concept of motor development of children, ages 4-8.
- 213. DANCE FOR CHILDREN (3). LEC. 2, LAB. 2. Includes all forms of dance suitable for elementary school age children with emphasis on creative dance activities which afford a progression in dance skills.
- 228. SPORTS OFFICIATING (3). LEC. 2, LAB. 2. Basic officiating principles applicable to all sports with lab experiences and study of rules for selected sports.
- 295. SCHOOL HEALTH (3).

296. COMMUNITY HEALTH (3).
315. KINESIOLOGY (4). LEC. 3, LAB. 2. Pr., ZY 250.
335. EXERCISE AND SPORT PSYCHOLOGY (4). Pr., PG 211. Examination of the role of psychological factors, including motivation, anxiety and personality in sport and physical activity.
351. AQUATICS INSTRUCTOR TRAINING (3). LEC. 1, LAB. 4. Pr., PE 230 or equivalent certification. Development of skills and teaching abilities leading to related American Red Cross aquatic instructor certifications.
386. LEADERSHIP IN HEALTH PROMOTION (3). Pr., HHP 201. Theories, techniques and leadership procedures applied to health promotion settings.
392. CONSUMER HEALTH (3). Pr., HHP 195. Basic principles and concepts associated with the selection and use of health products, services and health information.
394. METHODS OF HEALTH INSTRUCTION (3). LEC. 2, LAB. 2.
396. DRUG USE AND ABUSE (3). Investigation of stimulants, depressants, alcohol, narcotics and tobacco. The effects of these substances on the human body and the social, economic and community problems associated with their use.
404. ATHLETIC INJURIES (3).
405. PHYSIOLOGY OF EXERCISE (4). LEC. 3, LAB. 2. Pr., ZY 251. Principles of physiology with emphasis on the application of physiological findings to practical problems related to human physical activity.
410. HEALTH EDUCATION AND PHYSICAL EDUCATION IN THE ELEMENTARY SCHOOL (4). Pr., admission to teacher education. Basic knowledge and understanding of health education and physical education concepts and teaching strategies. Open only to elementary education majors only.
412. INSTRUCTIONAL STRATEGIES IN PHYSICAL EDUCATION (3). LEC. 2, LAB. 2. Pr., admission to teacher education for certification program.
413. TEACHING PHYSICAL EDUCATION IN ELEMENTARY SCHOOLS (4). LEC. 2, LAB. 4. Pr., admission to teacher education for certification program and HHP 412.
414. TEACHING PHYSICAL EDUCATION IN SECONDARY SCHOOLS (4). LEC. 2, LAB. 4. Pr., admission to teacher education for certification program and HHP 412.
416. ADAPTIVE PHYSICAL EDUCATION (3). LEC. 2, LAB. 2. Pr., ZY 250, RSE 376 or departmental approval. Review of anatomy, physiology and psychology pertaining to special programs of physical education for the temporarily and permanently handicapped, with lab practice in posture training and remedial gymnastics.
424. ORGANIZATION OF INTRAMURAL SPORTS PROGRAMS (3). LEC. 2, LAB. 2.
425. PROFESSIONAL INTERNSHIP (15). Pr., senior standing, professional screening, appropriate professional courses. Provides supervised, on-the-job experiences in a school, college or other appropriate setting. These experiences will be accompanied by regularly scheduled discussion periods to provide positive evaluation and analysis of the intern experience.
426. EVALUATION AND MEASUREMENT IN PHYSICAL EDUCATION (3). LEC. 2, LAB. 2. Pr., FED 400.
429. MOTOR LEARNING AND PERFORMANCE (4). LEC. 3, LAB. 2. Pr., PG 211. Process of motor skill acquisitions; emphasis on variables that influence motor learning and performance.
446. DIRECTED INDEPENDENT STUDY (1-10). The student's learning efforts are guided toward desired objectives. Includes evaluation by professor and student of work accomplished at regular intervals.
450. SPECIAL TOPICS (1-5). Seniors and professors pursue cooperatively selected concepts and theoretical formulations normally in small groups.
470. HONORS THESIS (3-6). Pr., admission to University Honors Program; junior or senior standing. May be repeated for a maximum of six hours. Open only to HHP students in the University Honors Program with the consent of the Honors Program Advisor.
471. HONORS READINGS AND SPECIAL TOPICS (3-6). Pr., admission to University Honors Program; junior or senior standing. May be repeated for a maximum of six hours. Open only to students in the Honors Program with the consent of the Honors Program Advisor.
475. HEALTH PROMOTION IN THE WORKPLACE (3). Pr., HHP 195. Principles basic to the promotion of health within businesses and corporations. Includes development and evaluation of worksite programs such as stress management, smoking cessation, weight control, physical fitness, etc.
485. SOCIAL RECREATION (3). The organizing, planning and implementing of social oriented activities in park and recreation settings.
490. HEALTH FITNESS INSTRUCTOR TRAINING (4). LEC. 2, LAB. 4. Pr., ZY 250, 251. Principles of anatomy, physiology and biomechanics to physical activity, fitness testing, exercise prescription and the development of exercise programs for individuals of different ages who vary in fitness and health status.
494. EMERGENCY CARE AND FIRST AID (3). LEC. 2, LAB. 2. Prevention of injuries and emergency care of illnesses and injuries. Includes cardiopulmonary resuscitation (CPR).
495. PRACTICUM (1-10). Provides experiences relating theory and practice, usually carried on simultaneously.

ADVANCED UNDERGRADUATE AND GRADUATE

500. PROGRAMMING IN HEALTH PROMOTION (3). Pr., HHP 386. Program planning procedures, techniques and related administrative functions for health promotion agencies.
501. SPORT MANAGEMENT (5). Pr., HHP 201. Management of sports programs in a variety of agencies.
505. PRINCIPLES OF ADULT FITNESS (4). LEC. 2, LAB. 2. Pr., HHP 405 or departmental approval. Introduction to the basic principles of exercise testing, exercise prescription, and supervision of programs for adult populations.

- 510. ADVANCED ATHLETIC TRAINING (5). LEC. 4, LAB. 2. Pr., HHP 404 or departmental approval. Prevention of injuries and advanced techniques of athletic training, including therapeutic modalities and injury rehabilitation.
- 517. PHYSICAL EDUCATION FOR THE MENTALLY RETARDED (3). LEC. 2, LAB. 2. Pr., HHP 211. The motor characteristics of the mentally retarded and the design of special programs of physical education; involves working with mentally retarded children.
- 520. SOCIOLOGY OF SPORT (5). Sport and culture. Attention is given to social processes and human behavior in sport situations.
- 570. STRENGTH POWER TRAINING: THEORY AND PRACTICE (5). Pr., HHP 315, 405. Theoretical and practical concepts related to strength training and the role of the strength coach.
- 594. EMERGENCY CARE INSTRUCTOR TRAINING (3). LEC. 2, LAB. 2. Pr., HHP 494 or equivalent certification. Advanced emergency care techniques and American Red Cross Instructor certification in basic life support courses.

COURSES FOR GRADUATE STUDENTS

- 601. HISTORY OF SPORT AND PHYSICAL EDUCATION (5). Historical backgrounds of sport and physical education with emphasis on the development of significant trends and the contributions of individuals.
- 609. ADVANCED HEALTH SCIENCE (5). Pr., departmental approval. Principles and concepts basic to the improvement of individual and group living and the role of the home, school and community in the development of sound physical and mental health.
- 614. PRINCIPLES OF BIOMECHANICS (5). Anatomical and technical principles of mechanics applied to human movement. Topics include applied anatomy, linear and angular kinematics, linear and angular kinetics and fluid mechanics.
- 616. BIOMECHANICS OF SPORT INJURY (5). Analysis of musculoskeletal factors, pathomechanics and tissue properties that define the tolerance of the human body to the forces and torques developed in sport activities. Techniques for prevention of injury and design of protective equipment based on such information.
- 617. LABORATORY TECHNIQUES IN BIOMECHANICS (3). LEC. 1, LAB. 4. Pr. or Coreq., HHP 614. Theoretical basis and practical application of laboratory techniques in biomechanics to include: filming, digitizing, video methods, force measuring devices.
- 618. CURRENT PROBLEMS IN HEALTH EDUCATION (5). Pr., departmental approval.
- 619. SCIENTIFIC PRINCIPLES APPLIED TO PHYSICAL EDUCATION AND ATHLETICS (5). Pr., undergraduate major or minor in health and physical education. Application of physics, physiology and psychology to the development of physical skills and related topics including reaction time, motivation, maturation, illusions, morale and problems of group social living in physical education and athletics.
- 625. INTERNSHIP (5-15). Supervised, on-the-job experiences in a school, college, or other appropriate setting. These experiences accompanied by regularly scheduled, on-campus discussion periods provide evaluation and analysis of the intern experience.
- 626. PHYSICAL FITNESS: A CRITICAL ANALYSIS (5). Pr., HHP 405 or equivalent or consent of department head. Critical analysis of physical fitness objectives of physical education through inquiry into current research in medicine, physiology of muscular activity and physical fitness appraisal and guidance.
- 629. ADVANCED MOTOR LEARNING AND PERFORMANCE (5). Pr., HHP 429 or equivalent. Overview of factors affecting the learning and performance of motor skills; review of experimental studies and current issues in motor skill acquisition.
- 635. ADVANCED EXERCISE AND SPORT PSYCHOLOGY (5). Pr., HHP 335 or equivalent. Psychological variables related to participation in sports exercise.
- 646. DIRECTED INDEPENDENT STUDY (1-6). Student's learning efforts are guided toward desired objectives. Includes evaluation by professor and student of work accomplished at regular intervals.
- 650. SEMINAR (1-10). Pr., graduate standing. Advanced graduate students and professors pursue cooperatively selected concepts and theoretical formulations.
- 651. RESEARCH METHODS IN PHYSICAL ACTIVITY (5). Review, analysis and interpretation of available research with emphasis on designing new research to meet changing needs.
- 652. CURRICULUM AND TEACHING IN PHYSICAL EDUCATION (5). Teaching practices and appraisal of selecting experiences and content for curriculum improvement.
- 653. ORGANIZATION OF PROGRAM IN PHYSICAL EDUCATION (5). Program, organization and development of basic and supplementary materials for guiding teachers, faculties and school systems in the continuous improvement of curriculum and teaching practices.
- 654. EVALUATION OF PROGRAMS IN PHYSICAL EDUCATION (5). Evaluation and investigation of teaching effectiveness with attention also given to the utilization of human and material resources and the coordination of areas of specialization.
- 655. ADVANCED MOTOR DEVELOPMENT (5). Developing a theoretical understanding of perceptual motor development and movement education and in exploring the interdisciplinary implications of movement education for child development and the teaching-learning process.
- 657. ADMINISTRATION OF ATHLETICS (5). Pr., HHP 423 or equivalent. Standards and procedures associated with the administration of school and college athletics. Includes relationships with state and national athletic organizations.

658. FACILITIES AND EQUIPMENT IN PHYSICAL EDUCATION AND ATHLETICS (5). Pr., HHP 653 or 657 or departmental approval. Planning and management of budgets, facilities and equipment for physical education and athletic programs.
663. ADVANCED PHYSIOLOGY OF EXERCISE I (5). Pr., HHP 405 or equivalent. Physiological responses and control of metabolism, the cardiovascular system and the respiratory system during acute exercise training.
664. ADVANCED PHYSIOLOGY OF EXERCISE II (5). Pr., HHP 663 or equivalent. Physiological responses and adaptations to aerobic exercise training, strength training, aging and environmental extremes; endocrine response to exercise; limiting factors and fatigue in exercise.
672. LABORATORY TECHNIQUES IN EXERCISE PHYSIOLOGY (3). LEC. 1, LAB. 4. Pr., HHP 405. Theoretical basis and practical application of laboratory techniques in exercise physiology to include indirect calorimetry, heart and lung function assessment, body composition, blood chemistry analyses, etc.
680. SCHOOL-COMMUNITY RECREATION (5). Analysis of recreation as it relates to the school and community.
691. PERSPECTIVES ON HEALTH EDUCATION (5). Pr., basic health science course or departmental approval. Developments in school and public health, medicine and related health sciences in relation to modern health education programs.
692. CONSUMER HEALTH EDUCATION (5). Pr., basic health science course or departmental approval. Principles related to the selection and use of health products services and health information.
693. WORLD HEALTH PROBLEMS (5). Pr., basic course in health science, SOC 201, EC 200 or departmental approval. Health practices, beliefs and programs in selected countries and cultures.
694. TEACHING SEX EDUCATION (5). Pr., PG 444 or equivalent. Basic concepts, current research, resources and teaching strategies related to human sexuality and education.
695. PRACTICUM (1-15). Experiences closely relating theory and practice, usually carried on simultaneously.
696. GRADUATE RESEARCH FORUM (1). May be repeated but counted only once toward graduation. Presentations by graduate students of proposals and/or findings. Analysis of procedures and findings.
697. DRUG ABUSE EDUCATION (5). Pr., departmental approval. Practical and working understanding of drugs and related problems to prospective and in-service teachers, counselors, administrators, pharmacists, law enforcement personnel, nurses and others.
699. RESEARCH AND THESIS (CREDIT TO BE ARRANGED.) May be taken more than one quarter.
715. BIOMECHANICS OF SPORT (5). In-depth investigation of the mechanical and musculoskeletal factors that affect human performance in sport activities; methods of cinematographic, electromyographic and electronic assessment of human motor skills with emphasis on de termination of efficient movement patterns.
730. THEORETICAL BASES OF MOTOR LEARNING AND MOTOR CONTROL (4). LEC. 3, LAB. 2. Pr., HHP 629 or equivalent. Contemporary theories of motor learning and motor control; critical review and analysis of research related to models of motor performance; laboratory experiences that demonstrate current theoretical issues of motor learning and control.
746. DIRECTED INDEPENDENT STUDY (1-6). Student's learning efforts are guided toward desired objectives. Includes evaluation by professor and student of work accomplished at regular intervals.
750. SEMINAR (1-10). Pr., graduate standing. Advanced graduate students and professors pursue cooperatively selected concepts and theoretical formulations.
763. BIOCHEMISTRY OF EXERCISE (5). Pr., HHP 664 or equivalent. Regulation of the metabolic pathways of energy metabolism with emphasis on the energetic response to acute exercise and exercise training.
770. NEUROMUSCULAR ASPECTS OF EXERCISE AND TRAINING (5). Pr., HHP 664 or departmental approval. Effects of various methods of exercise and training on nerve and muscular cell structure and function. Neuromuscular integration in exercise.
795. PRACTICUM (1-15). Experiences closely relating theory and practice, usually carried on simultaneously.
796. GRADUATE RESEARCH FORUM (1). May be repeated but counted only once toward graduation. Presentations by graduate student of proposals and/or findings. Analysis of procedures and findings.
798. FIELD PROJECT (CREDIT TO BE ARRANGED.) May be taken more than one quarter.
799. RESEARCH AND DISSERTATION (CREDIT TO BE ARRANGED.) May be taken more than one quarter.

History (HY)

Professors Hansen, *Chair*, Bond, Conniff, Fabel, Flynt, Harrell, Kicklighter, Lewis, McDonough, McFarland, Szechi and Trimble
Associate Professors Beckwith, Biggs, Bohanan, Crocker, Cronenberg, Essah, Gerber, Hall, Melancon, Olliff,
Assistant Professors Carey, Harrison and Jakeman

101. WORLD HISTORY I (3). A survey of world civilization from prehistory to 1400.
102. WORLD HISTORY II (3). A survey of world civilization from 1400-1815.
103. WORLD HISTORY III (3). A survey of world history from 1815 to the present.
121. TECHNOLOGY AND CIVILIZATION I (3). The interaction of technology and of human culture from prehistoric times to the industrial revolution.
122. TECHNOLOGY AND CIVILIZATION II (3). The interaction of technology and of human culture from the industrial revolution to the end of the 19th century.

123. TECHNOLOGY AND CIVILIZATION III (3). The interaction of technology and other aspects of human culture in the 20th century.
171. HONORS PROGRAM I. ANCIENT AND MEDIEVAL HISTORY (3). Pr., admission to Honors Program.
172. HONORS PROGRAM II. EARLY MODERN HISTORY (3). Pr., admission to Honors Program.
173. HONORS PROGRAM III. MODERN HISTORY (3). Pr., admission to Honors Program.
191. HONORS TECHNOLOGY AND CIVILIZATION I (3). Pr., admission to Honors Program. Interaction of technology and human culture from historic times to the Industrial revolution for selected honors students from scientific and engineering disciplines.
192. HONORS TECHNOLOGY AND CIVILIZATION II (3). Pr., admission to Honors Program. Interaction of technology and human culture from industrial revolution to the end of the 19th century for selected honors students from scientific and engineering disciplines.
193. HONORS TECHNOLOGY AND CIVILIZATION III (3). Pr., admission to Honors Program. Interaction of technology and culture in 20th century for selected honors students from scientific and engineering disciplines.
201. HISTORY OF THE UNITED STATES TO 1865 (5).
202. HISTORY OF THE UNITED STATES SINCE 1865 (5).
207. EUROPEAN HISTORY, 1500-1815 (5). Early modern Europe through the French Revolution.
208. EUROPEAN HISTORY SINCE 1815 (5). A survey of Europe since the French Revolution.
300. CONTEMPORARY CENTRAL AMERICAN HISTORY (3). Pr., sophomore standing. An analysis of the nature and origins of problems facing contemporary Central America.
301. INTRODUCTION TO FAR EASTERN HISTORY (5). Pr., sophomore standing. Major cultural and institutional developments of the area.
306. CONTEMPORARY HISTORY (3). Recent events and their effect on the modern world.
307. HISTORY OF U.S. AIR POWER (3). Traces evolution of U.S. military aviation policy.
308. NAVAL HISTORY OF THE UNITED STATES (3). The United States Navy from the American Revolution to the present including the evolution of naval technology and strategy and the role of the navy in defense, discovery and diplomacy.
309. MILITARY HISTORY OF THE UNITED STATES (3). History of United States military policy, strategy and tactics, 1775 to the present (land warfare).
310. GRECO-ROMAN HISTORY (5). Pr., sophomore standing. The Classical or Hellenic Civilization from the Homeric Age to the reign of the Emperor Justinian.
311. MEDIEVAL HISTORY (5). Pr., sophomore standing. Europe from the fall of the Roman Empire to the Age of Discovery.
315. HISTORY OF AFRO-AMERICANS IN U.S. TO 1865 (3). Pr., sophomore standing. Survey of black history in America.
316. HISTORY OF AFRO-AMERICANS SINCE 1865 (3). Pr., sophomore standing.
317. AMERICAN FOLK/ORAL HISTORY (3). Cultural survey of the "common people," utilizing oral history.
318. UNITED STATES SOCIAL HISTORY (5). Pr., sophomore standing. A survey of the history of American society, focusing on such issues as family life, the nature of work and the impact of immigration.
319. UNITED STATES INTELLECTUAL HISTORY (5). Pr., sophomore standing. A survey of the history of American thought.
321. U.S. LEGAL AND CONSTITUTIONAL HISTORY (3). Describes changes in U.S. Constitution and legal system.
325. THE HISTORY OF WOMEN IN THE UNITED STATES TO 1870 (3). American women, Indian, Black and White from colonial settlement through the Civil War.
326. THE HISTORY OF WOMEN IN THE UNITED STATES SINCE 1870 (3). Political and economic roles of women from 1870 to the present.
330. HISTORY OF IRELAND (3). Pr., sophomore standing. Survey of Irish history.
337. GERMAN HISTORY (5). Survey of German history since the Reformation.
350. HISTORY OF POLITICAL PARTIES (5). Pr., sophomore standing. Origin and growth of American political parties from the Federalist era to the present.
354. HISTORY OF THE MIDDLE EAST (3). Surveys history and culture of region.
355. HISTORY OF THE IBERIAN PENINSULA (5). Spanish and Portuguese history, prehistoric to contemporary.
356. MODERN FRANCE (5). From the Ancien Regime to the present.
359. WORLD WAR II (3). Discusses origins and military campaigns of WWII.
374. TECHNOLOGY AND SOCIETY IN AMERICA I (3). Pr., sophomore standing. The interrelationship between technology and society in the 19th century.
375. TECHNOLOGY AND SOCIETY IN AMERICA II (3). Pr., sophomore standing. The interrelationship between technology and society.
378. HISTORY OF SPACE TRAVEL (3). Pr., sophomore standing. Study of space exploration.
379. SCIENTIFIC REVOLUTIONS (3). Pr., junior standing. Scientific revolutions since the Renaissance studied in their social and intellectual context.
380. SCIENCE FICTION AS INTELLECTUAL HISTORY (5). Pr., junior standing. The interaction among science, technology and other aspects of human culture as dramatized in classic works of science fiction.

- 381. HISTORY OF ALABAMA (5). Pr., sophomore standing. A brief history of Alabama from the beginning to the present.
- 390. SPECIAL TOPICS IN HISTORY (3). Pr., junior standing. Topics vary. May be taken twice on different topics.
- 399. HISTORY INTERNSHIP (5). Pr., junior standing. Inservice program with a professional agency.
- 405. HISTORICAL RESEARCH AND WRITING I (3). Pr., junior history majors. An introduction to the historical research methods.
- 406. HISTORICAL RESEARCH AND WRITING II (3). Pr., HY 405. Writing a research paper.
- 471. HONORS READING COURSE (3-5). Pr., admission to University Honors Program. Readings in special topics.
- 473. HONORS RESEARCH AND THESIS (1-3). Pr., admission to University Honors Program. Research in specialized topics.

ADVANCED UNDERGRADUATE AND GRADUATE

- 500. AMERICAN COLONIAL HISTORY (5). The political, economic, and social history of the colonies from their founding to the end of the French and Indian War, 1763.
- 501. THE AMERICAN REVOLUTION AND THE CONFEDERATION, 1763-1789 (5). The new British Colonial policy, the War for independence, and the first federal constitution and movement to replace it.
- 502. FEDERALIST AND JEFFERSONIAN AMERICA, 1789-1815 (5). The establishment of the new federal government, the origins of American political parties, and the role of the United States in the French Revolutionary and Napoleonic Wars.
- 503. THE AMERICAN SYSTEM AND JACKSONIAN DEMOCRACY, 1815-1850 (5). Nationalism, sectionalism, egalitarianism, and expansion.
- 504. THE CIVIL WAR (5). The sectional controversy from the Compromise of 1850 to the beginning of hostilities in 1861, and the military, economic, social, and political aspects of the war.
- 506. UNITED STATES HISTORY, 1865-1900 (5). United States history from the end of the Civil War to the beginning of the Progressive era.
- 507. UNITED STATES HISTORY, 1900-1945 (5). U.S. history from the beginning of the Progressive era to the end of World War II.
- 508. UNITED STATES HISTORY, 1945-PRESENT (5). U.S. history from the end of World War II to the present.
- 509. 19TH-CENTURY U.S. DIPLOMACY (5). U.S. relations with foreign powers to 1919.
- 510. 20TH-CENTURY U.S. DIPLOMACY (5). Emergence of America as a world power since 1919.
- 513. THE SOUTH TO 1865 (5). The origins and growth of distinctive social, economic, cultural and ideological patterns in the South with emphasis on period 1815-1860.
- 514. THE SOUTH SINCE 1865 (5). Major trends in the South since the Civil War with emphasis on social, economic, cultural and ideological development.
- 516. SOCIAL AND INTELLECTUAL HISTORY OF MODERN EUROPE (5). Topics in social and intellectual history which have shaped modern European cultures.
- 526. RENAISSANCE AND REFORMATION, 1348-1559 (5). Europe during the Italian Renaissance, the Protestant and Catholic Reformations and the Age of Discovery.
- 527. EARLY MODERN EUROPE, 1559-1715 (5). Europe during the age of religious war, state-building, scientific discovery, social change and conflict.
- 528. THE ENLIGHTENMENT, 1660-1789 (5). Analysis of the European social and intellectual movement from its origins in the mid-17th century through its impact on the French Revolution.
- 529. REVOLUTIONARY EUROPE, 1789-1850 (5). Analysis of the French Revolution and Napoleonic Empire and an examination of the political, social and intellectual impact of revolution in Europe in the first half of the 19th century.
- 531. IMPERIAL EUROPE, 1850-1905 (5). Examination and analysis of the political, social, intellectual, economic and diplomatic history of Europe from the aftermath of the 1848/49 revolutions to the eve of the First World War.
- 532. EUROPE IN CRISIS, 1905-1950 (5). Europe in the age of world wars, the Great Depression and totalitarianism.
- 533. CONTEMPORARY EUROPE, 1950-PRESENT (5). History of post-war Europe emphasizing economic and political integration, the Cold War, the Soviet collapse and cultural development.
- 550. EASTERN ASIA (5). A history of China and Japan in the modern world.
- 551. BRAZIL, 1800-PRESENT (5). National period.
- 552. CENTRAL AMERICA AND THE CARIBBEAN (5). An analysis of cultural developments in Central America and the Caribbean areas in the 19th and 20th centuries.
- 553. SOUTH AMERICA TO 1800 (5). The colonial and early national period.
- 554. HISTORY OF MEXICO (5). An analysis of the unique cultural development of Mexico.
- 555. SPANISH SOUTH AMERICA, 1800-PRESENT (5). An analysis of cultural developments in South America in the 19th and 20th centuries.
- 556. HISTORY OF RUSSIA, 800-1861 (5). Describes the birth and development of Russian culture, society and politics up to the emancipation of the serfs.
- 557. HISTORY OF RUSSIA/USSR SINCE 1861 (5). Examines Russia/Soviet Union through reform, revolution, and development of a new society to the present day.
- 571. MEDIEVAL ENGLAND (5). Britain from earliest times to the Reformation.
- 572. THE MAKING OF GREAT BRITAIN (5). Britain from Reformation to American Revolution. 1485-1783.

573. MODERN BRITAIN (5). Britain from American Revolution to present, 1783-1990.
579. THE INDUSTRIAL REVOLUTION (5). Pr., junior standing; HY 201 and 202 or 207 and 208. The late 18th century to the end of the 19th century in England, Europe and the U.S. Focus will be on technological developments, the factory system and their social and cultural consequences.
580. THE HISTORY OF FLIGHT (5). Stages in the development of human flight, including both aeronautics and space exploration, with interpretative analysis.
581. AMERICAN URBAN HISTORY (5). Pr., HY 201, 202. Examination of American cities from colonial times to the present.
590. HISTORY OF THE INDIANS OF NORTH AMERICA (5). Drawing on ethnological, anthropological and archaeological sources with particular attention to post-contact period and to the Cherokee, Choctaw and Creek tribes of the Southeastern U.S.

COURSES FOR GRADUATE STUDENTS

600. SEMINAR IN AMERICAN HISTORY, 1763-1800 (5) From Revolutionary origins to constitutional government.
601. SEMINAR IN AMERICAN HISTORY, 1800-1850 (5). The early national period, from Jefferson to Jackson.
602. SEMINAR IN AMERICAN HISTORY, 1850-1876 (5). The Civil War, from crisis through reconstruction.
603. SEMINAR IN AMERICAN HISTORY, 1876-1920 (5). Populism, progressivism and World War.
604. SEMINAR IN AMERICAN HISTORY, 1920-PRESENT (5). Modern America and its problems.
605. SEMINAR IN 19TH CENTURY U.S. DIPLOMACY (5). Alternate years. America confronts the world.
606. SEMINAR IN 20TH CENTURY U.S. DIPLOMACY (5). Alternate years. The U.S. and the modern world.
608. SEMINAR IN AMERICAN SOCIAL AND INTELLECTUAL HISTORY (5). Aspects of the United States from colonial beginnings to the present.
609. SEMINAR IN THE OLD SOUTH (5). The structure and history of the antebellum South.
610. SEMINAR IN THE NEW SOUTH (5). The South in modern America.
611. SEMINAR IN BLACK HISTORY (5). The Negro in American history.
612. SEMINAR IN ISSUES IN U.S. WOMEN'S HISTORY (5). Women in American history.
613. SEMINAR IN AMERICAN RELIGIOUS HISTORY (5).
614. SEMINAR IN THE HISTORY OF TECHNOLOGY (5). Aspects of the history of technology.
615. SEMINAR IN AEROSPACE HISTORY (5). Aspects of the history of flight.
616. SEMINAR IN COLONIAL HISTORY OF THE U.S. TO 1763 (5).
629. SEMINAR IN HISTORICAL METHODS (5). The nature and methodology of historical writing.
630. SEMINAR IN POPULAR CULTURE IN EARLY MODERN EUROPE (5). Thematic treatment of society between 1348-1789.
633. SEMINAR IN RENAISSANCE AND REFORMATION EUROPE, 1348-1559 (5). Analysis of European religious, intellectual, constitutional and social development from the Black Death to the wars of religion. Emphasis given to humanism, religious reforms, social and economic change and the growth of the state.
634. SEMINAR IN RUSSIAN SOCIETY IN REVOLUTION (5). The revolution of 1917 - causes, course and results.
635. SEMINAR IN MODERN EUROPEAN HISTORY (5). Aspects of late 19th and early 20th century European history.
636. SEMINAR IN COLONIAL LATIN AMERICA (5). The Spanish empire in the New World to national independence.
637. SEMINAR IN LATIN AMERICA IN THE NATIONAL PERIOD. REVOLUTIONARY MOVEMENTS AND NATIONAL DEVELOPMENTS (5). The modern nations of Central and South America.
638. SEMINAR IN THE FRENCH REVOLUTIONARY AND NAPOLEONIC ERA (5). Causes and course of the revolution of 1789 and of the Napoleonic empire.
639. EUROPE IN THE AGE OF NATIONALISM, 1815-1890 (5). Examination of major political, social, cultural economic and diplomatic developments in 19th century Europe.
640. SEMINAR IN EARLY MODERN EUROPE (5). Analysis and description of European political, social and cultural development from the wars of religion through the reign of Louis XIV. Emphasis on topics of religious conflict, state-building, social change and scientific and intellectual innovations.
641. SEMINAR IN EARLY MODERN BRITAIN, 1558-1714 (5). Advanced introduction to early modern European/British history.
642. SEMINAR IN THE BRITISH ANCIEN REGIME, 1688-1798 (5). Advanced introduction to 18th century European/British history.
644. SEMINAR IN MODERN EUROPEAN DIPLOMACY (5). Late 19th and 20th century international relations.
647. SEMINAR ON ARCHIVES AND RECORDS IN SOCIETY (5). History of recorded information and archives; development of archival principles, theory, methods and institutions.
648. SEMINAR ON ARCHIVAL THEORY AND METHODS (5). Appraisal, acquisition, arrangement, description, preservation management, reference and access to records; advocacy and outreach programs.
649. SEMINAR ON ARCHIVAL ISSUES AND MANAGEMENT (5). Managerial functions, information systems, computer networks and archival issues.
650. ARCHIVAL INTERNSHIP (10). Pr., HY 647, 648, 649. On-the-job training in an archival setting.
651. HISTORIC PRESERVATION INTERNSHIP (10). On-site professional supervised training.

- 660. RESEARCH SEMINAR IN UNITED STATES HISTORY TO 1865 (5). Research into topics in American history before 1865 with emphasis on primary sources. May be taken twice for credit.
- 661. RESEARCH SEMINAR IN UNITED STATES HISTORY SINCE 1865 (5). Research into topics in American history since 1865 with emphasis on primary sources. May be taken twice for credit.
- 662. RESEARCH SEMINAR IN LATIN AMERICAN HISTORY (5). Research into topics in Latin American history with emphasis on primary sources. May be taken twice for credit.
- 663. RESEARCH SEMINAR IN EUROPEAN HISTORY TO 1789 (5). Research into topics in European history to 1789 with emphasis on primary sources. May be taken twice for credit.
- 664. RESEARCH SEMINAR IN EUROPEAN HISTORY SINCE 1789 (5). Research into topics in European history since 1789 with emphasis on primary sources. May be taken twice for credit.
- 665. RESEARCH SEMINAR IN THE HISTORY OF TECHNOLOGY (5). Research into topics in the history of technology with emphasis on primary sources. May be taken twice for credit.
- 699. RESEARCH AND THESIS. (CREDIT TO BE ARRANGED.) Research and writing of the M.A. thesis.
- 739. SEMINAR IN HISTORIOGRAPHY AND THEORY OF HISTORY (5). Even years. The philosophy and history of historical writing.
- 760. INTRODUCTION TO THE TEACHING OF HISTORY (1). Techniques and practice of collegiate teaching.
- 799. RESEARCH AND DISSERTATION. (CREDIT TO BE ARRANGED.) Research and writing of the Ph.D. dissertation.

READING COURSES

The following reading courses are offered to give doctoral students an opportunity for study in specialized areas and are rigorously supervised by the professors responsible for the fields. Registration is by permission of the department and the major professor. In order that students may pursue special topics with different professors and in different areas of concentration, with departmental permission Reading Courses may be repeated for credit.

- 720. READING COURSE IN AMERICAN HISTORY TO 1876 (5). Topics in American history to 1876.
- 721. READING COURSE IN AMERICAN HISTORY SINCE 1876 (5). Topics in American history since 1876.
- 722. READING COURSE IN EUROPEAN HISTORY TO 1815 (5). Topics in European history to 1815.
- 723. READING COURSE IN EUROPEAN HISTORY SINCE 1789 (5). Topics in European history since the French Revolution.
- 724. READING COURSE IN LATIN AMERICAN HISTORY (5). Topics in the history of South and Central America.
- 725. READING COURSE IN ENGLISH HISTORY (5). Topics in British history.
- 727. DIRECTED READING IN THE HISTORY OF TECHNOLOGY (5). Topics in the history of technology.

Horticulture (HF)

Professors Dozier, *Chairman*, Gilliam, Goff, Himelrick, Keever, Ponder, Powell and Tilt
Associate Professors Behe, Brown, Eakes, Woods and Williams
Assistant Professors Dane, Kemble, Kessler, Sibley and Simmone
Adjunct Instructors C. Brown and Sistrunk

- 101. INTRODUCTION TO HORTICULTURE (3). LEC. 2, LEC.-DEM. 2. Fall. Practical and scientific principles of horticulture. Primarily for new students majoring in horticulture and non-majors who want a general knowledge of the subject. General techniques of ornamental, fruit and vegetable gardening, and career opportunities in horticulture will be discussed.
- 201. ORCHARD MANAGEMENT (5). LEC. 3, LAB. 4, Fall, Spring. Propagating, planting, pruning, cultivating, fertilizing, spraying, thinning, harvesting, grading, storing and marketing the most valuable fruits grown in the South.
- 202. FRUIT AND VEGETABLE PRODUCTION (5). LEC. 3, LAB. 4, Fall. Adaptation of and cultural practices for fruit and vegetable crops for production in Alabama. Degree credit may not be earned in HF 202 and 201 or 208.
- 204. SCIENTIFIC APPROACHES TO ORGANIC GARDENING (3). LEC. 2. Principles, production practices, maintenance, harvesting and marketing of organically and traditionally home-grown vegetables.
- 221. LANDSCAPE GARDENING (5). LEC. 3, DEM. 4. Pr., BI 102. Principles of landscape gardening applied to the development of small home grounds and school grounds. The lecture-demonstration periods are devoted to the identification and use of ornamental plants, landscape drawings, and the propagation and maintenance of ornamental plants.
- 222. ARBORICULTURE (5). LEC. 3, LAB. 4. Pr., HF 221 or equivalent. Identification, culture and use of ornamental trees in landscape plantings.
- 223. EVERGREEN SHRUBS AND VINES (5). LEC. 3, LAB. 4. Pr., HF 221 or equivalent. Identification, culture and use of broadleaf and narrowleaf evergreens in landscape plantings.
- 224. PLANT PROPAGATION (5). LEC. 3, LAB. 4. Pr., BI 102. Basic principles and practices involved in the propagation of horticulture plants.
- 225. FLOWER ARRANGING (3). LEC. 2, LAB. 2. General elective. Principles and practices of flower arranging for the home. Fee of \$50 for supplies.

226. LANDSCAPE GRAPHICS (3). LEC. 2, LAB. 3. The development of drawing and drafting skills used to evolve and communicate schematic and detail landscape design concepts.
321. SMALL TREES, SHRUBS AND VINES (5). LEC. 3, LAB. 4. Pr., HF 221 or equivalent. Identification, culture and use of small trees, shrubs and vines in the landscape.
323. GREENHOUSE ENVIRONMENT CONTROL (5). LEC. 4, LAB. 3. Pr., BI 102, HF 224. Principles and practices of construction and utilizing greenhouses for plant propagation, crop production and research.
324. ELEMENTS AND PRINCIPLES OF LANDSCAPE DESIGN (5). LEC. 3, LAB. 4. Pr., HF 221 and at least five hours from the plant materials courses to be taken previously or concurrently, or departmental approval. The art elements and design principles as they relate to landscape design. The organization of outdoor spaces leading to the evolution of landscape designs emphasized.
328. LANDSCAPE CONSTRUCTION (5). LEC. 2, LAB. 6. Pr., HF 226, 324 or departmental approval. Investigation of the principles and practices used in the detail design and implementation of a landscape site plan or landscape planting plan. Topics to be covered: drafting, surveying, properties of construction materials, earthwork, drainage and specifications.
330. HORTICULTURE INTERNSHIP (5). May be taken more than once for a total of 15 hours. Pr., departmental approval, S-U, graded. Practical on the job training under supervision in selected commercial establishments to include wholesale and retail nurseries, greenhouses, garden centers, landscape and landscape maintenance firms and fruit and vegetable horticultural production units. Each term of employment is one quarter.
340. INDUSTRIAL FOOD PRESERVATION TECHNOLOGY (5). LEC. 3, LAB. 4. Pr., departmental approval or junior standing. Fall, odd years. Principles of food preservation as applied to industry. Processes considered include refrigeration, pasteurization, canning, freezing, drying concentration, fermentation, pickling, salting, irradiation and the use of food additives.
390. UNDERGRADUATE SEMINAR (1). LEC. 1. Pr., junior standing. S-U graded. Develops an understanding of current developments and career opportunities in horticulture.
410. HERBACEOUS ORNAMENTAL PLANTS (5). LEC. 3, LAB. 4. Spring. Pr., HF 221 or departmental approval. Identification, culture, and use of herbaceous annuals and perennials, bulbs, herbs, and ornamental grasses. Consideration of flower bed and border preparation, care and maintenance.
412. INTERIOR PLANTSCAPING (3). LEC. 2, LEC.-DEM. 2. Fall. Pr., HF 221 or departmental approval. Introduction to the selection, installation, and care of tropical foliage plants in public interior settings. Topics include natural and artificial light, plant acclimatization, growing media, fertilizers, containers and pest control. About 50 plants common in interior plantings will be identified and their uses and limitations discussed.
415. RETAIL GARDEN CENTER MANAGEMENT (5). LEC. 4, LAB. 2. Pr., HF 222, 223, and 321 or departmental approval. The following objectives will be covered: financing, selecting a location, designing a center, stocking, selling, personnel management, advertising and maintaining plants on the lot.
425. FLOWER SHOP MANAGEMENT (5). LEC. 4, LAB. 3. Pr., HF 225, 522, MN 241, ACF 211, departmental approval. Winter, odd years. Principles and practices in the establishment and management of a retail flower shop. Store location, financing, buying, floral design, pricing and merchandise control.
426. MINOR PROBLEMS (3-5). May be taken more than once for a total of 15 hours. Pr., departmental approval. Selected problems in either vegetable production, pomology, food technology, or landscape and ornamental horticulture, on which independent library, field, laboratory, or greenhouse investigations are made, under supervision of instructors.
427. INTERMEDIATE LANDSCAPE DESIGN (5). LEC. 2, LAB. 6. Pr., HF 324 or departmental approval. Human, nature, art and technology and their influence on landscape design.
428. ADVANCED LANDSCAPE DESIGN (5). LEC. 2, LAB. 6. Pr., HF 328, 427, and at least 10 hours from the plant materials courses to be taken previously or concurrently, or departmental approval. Continuation of HF 427.
429. FOOD SCIENCE SEMINAR (1). Pr., senior standing. Winter. Lectures, discussions and literature reviews by staff, students and guest lecturers.

ADVANCED UNDERGRADUATE AND GRADUATE

501. COMMERCIAL VEGETABLE CROPS (5). LEC. 3, LAB. 4. Pr., HF 308. Fall, even years. Advanced course in production, storing, packaging and marketing of the major commercial vegetable crops.
504. FRUIT GROWING (5). LEC. 3, LAB. 4. Pr., BI 102, HF 201, CH 207. Summer, odd years. Production and marketing of commercial tree fruits grown in the South.
505. SMALL FRUITS (5). LEC. 3, LAB. 4. Pr., BI 102. Spring, even years. Principles and practices involved in the production of strawberries, grapes, blueberries, and brambles.
506. PECAN CULTURE (5). LEC. 3, LAB. 4. Pr., BI 102, CH 207, HF 201. Spring, odd years. Production and marketing of pecans, walnuts and chestnuts.
521. LANDSCAPE BIDDING, ESTABLISHMENT AND MAINTENANCE (5). LEC. 3, LAB. 4. Pr., BY 306, PLP 309. Winter. Principles and practices of the care and maintenance of trees and shrubs, including pruning, tree surgery, transplanting, and fertilization.
522. FLORICULTURAL CROP PRODUCTION (5). LEC. 4, LAB. 3. Pr., AY 304, BY 306, PLP 309. HF 323. ENT 502 or departmental approval. Spring, even years. Floricultural crop production under management in greenhouse and outdoor conditions.
523. NURSERY MANAGEMENT (5). LEC. 3, LAB. 4. Pr., HF 224, BY 306, AY 304. Winter. Principles and practices of the management of a commercial ornamental nursery.
531. ADVANCED LANDSCAPE GARDENING (4). LEC. 3, LAB. 4. Pr., BI 101, HF 221, graduate standing. Principles and practices applying to the use of ornamental plant material in landscaping.

Human Development and Family Studies

532. CONTROLLED PLANT GROWTH (5). LEC. 3, LAB. 4. Pr., AY 304, BY 306, CH 208, HF 323, junior standing. Controlling and directing growth of plants by manipulation of the environment and by the use of chemicals.
535. ADVANCED CARE AND MAINTENANCE OF ORNAMENTAL PLANTS (5). Pr., HF 521. Includes visits to nurseries, landscape construction firms, landscape maintenance firms and to installation and maintenance sites. On site participation in all phases of landscape installation and maintenance including extensive experiences in problem diagnosis.
543. FOOD CHEMISTRY (5). LEC. 3, LAB. 4. Pr., CH 207 or 203. Winter. Chemistry of the important components of foods and changes occurring during processing, storage, and handling.
545. FOOD ANALYSIS AND QUALITY CONTROL (5). LEC. 3, LAB. 4. Pr., HF 543. Spring, even years. Sensory, chemical and instrumental food analysis and its application to quality control and evaluation of grades and standards.
593. PRACTICUM (1-5). May be repeated not to exceed 10 hours credit. Not open to majors in Horticulture. Provides experience in horticulture closely relating theory and practice, usually carried on simultaneously.

COURSES FOR GRADUATE STUDENTS

601. EXPERIMENTAL METHODS IN HORTICULTURE (5). LEC. 3, LAB. 6. Summer, even years. Involves broad purposes of research, discovery and progress as related to the scientific method, research programs, horticulture programs, selecting projects, reviewing literature, preparing project outlines, conducting experiments, recording data, analyzing data and publication of results.
602. SEMINAR (1). Graduate students are required to attend seminar all quarters.
603. SPECIAL PROBLEMS IN HORTICULTURE (3-5). (CREDIT TO BE ARRANGED.) Pr., approved graduate standing. Any quarter. Selected problems in Vegetable Production, Pomology, Food Technology, or Ornamental Horticulture. Includes library work, laboratory research and the writing of a research paper.
604. PLANT GROWTH REGULATORS (5). LEC. 4, LAB. 2. Pr., CH 207 or BY 306 and departmental approval. Winter, even years. History, determination, separation, definition, chemistry and use of plant growth regulator substances in horticultural research and plant production.
605. NUTRITIONAL REQUIREMENTS OF HORTICULTURAL PLANTS (5). LEC. 4, LAB. 2. Pr., BY 306. Summer, odd years. Nutritional requirements of horticulture crops and factors affecting these requirements.
606. POSTHARVEST PHYSIOLOGY (5). LEC. 3, LAB. 4. Pr., BY 306 and graduate standing. Spring, even years. Physiological changes occurring in fresh fruits, vegetables and other horticultural plant products after harvest. Methods of studying these changes and factors influencing them.
607. PLANT BIOTECHNOLOGY (5). LEC. 3, LAB. 4. Pr., ZY 300 or departmental approval. Winter, odd years. Introduction to plant biotechnology, including plant tissue culture technologies and genetic transformation of plants and their application to horticultural crop improvement, analysis, regulation and risk assessment of transgenic plants.
699. RESEARCH AND THESIS. (CREDIT TO BE ARRANGED.)
799. RESEARCH AND DISSERTATION. (CREDIT TO BE ARRANGED.)

Human Development and Family Studies (HDF)

Professors Bradbard, Head, Avery, Henton, Lamke, Pettit, Salts, Sollie, Turner and Vaughn
Associate Professors Goddard, Mize, Pittman, Smith, Solheim and Waddell
Assistant Professors Abell, Cotton, Giles, Vazsonyi and White
Instructors Grover, Silvern and Wilbanks

157. FAMILY AND HUMAN DEVELOPMENT (3). Human development as it is affected by the family and the family as it affects and is affected by the environment. Prior credit for any other Human Development and Family Studies course precludes credit for this course for majors only.
200. MANAGEMENT FOR CONSUMERS (4). Management of consumer resources, with emphasis on decision-making and problem-solving skills over the life cycle.
267. PRINCIPLES, THEORIES AND METHODS OF HUMAN DEVELOPMENT (5). Introduction to the principles, theories and methods of human development.
269. MATE SELECTION AND MARITAL INTERACTION (4). Analysis of courtship, mate selection and marital interaction. Factors contributing to marital stability and success.
287. CAREERS IN HUMAN DEVELOPMENT AND FAMILY STUDIES (2). Introduces the range of career choices in the field of family and human development and the preparation needed to qualify for them. Includes orientation to the department.
301. EARLY AND MIDDLE CHILDHOOD DEVELOPMENT (5). LEC. 4, LAB. 2. Pr., HDF 267. Physical, intellectual, social and emotional development of children from early through middle childhood; familial influences on development and behavior. Laboratory experiences are required.
304. HUMAN SEXUALITY THROUGHOUT THE FAMILY LIFE CYCLE (4). Pr., SOC 201 and PG 201, junior standing. Human sexuality from a life cycle perspective, with emphasis on developmental, familial and societal factors that influence individual sexuality.
306. PATTERNS OF FAMILY INTERACTION (4). Pr., HDF 269. Current theories of family interaction including normal and deviant patterns and other effects.
308. RELATIONSHIP COMPETENCE (4). Pr., HDF 269. An empirical examination of the interpersonal competencies necessary for the development of successful dating and marital relationships.

309. INTRODUCTION TO MARRIAGE AND FAMILY THERAPY (4). Pr., HDF 269. A broad overview of the history, theory and application of marriage and family therapy.
310. TECHNIQUES OF CHILD AND FAMILY INTERVIEWING (4). Pr., departmental approval. Principles and techniques of interviewing and establishing a helping relationship with children and families.
323. CONSUMER AND THE MARKET (3). Pr., junior standing or departmental approval. Management of family resources and consideration of alternatives available to families as consumers. Consumer problems, use of information sources and analysis of laws protecting consumers.
338. STUDY ABROAD OPPORTUNITIES IN HUMAN SCIENCES (1). Introduction to the international scope of Human Sciences by examining language, climate, economics, food, clothing, shelter and family life in selected cultures of interest; an exploration of study abroad opportunities in pursuit of an International Minor in Human Sciences.
347. LABORATORY EXPERIENCES WITH YOUNG CHILDREN (3). LEC. 1, LAB. 6. Pr., HDF 267 and 301. Substantive lecture material and supervised participation in the Child Study Center preschool programs. (Required of all HDF majors.)
350. DAY CARE FOR CHILDREN (4). Pr., HDF 267, 301, junior standing or departmental approval. An historical and theoretical study of day care with discussion of multi-cultural programs, licensing standards and various patterns of group and family day care service. Field assignment required.
358. LEARNING EXPERIENCES FOR YOUNG CHILDREN (4). LEC. 3, LAB 3. Pr., HDF 301 and 347. Theoretical foundations and practical applications of programs and activities for young children.
399. EXPERIENTIAL LEARNING (1-6). TBA. departmental approval. Independent work experience arranged. A. Child Study Center; B. Other approved placements. May be taken more than once. Total credit not to exceed six hours.
409. UNDERGRADUATE RESEARCH AND STUDY (CREDIT TO BE ARRANGED.) (1-5). May be repeated for a maximum of 5 credits. Pr., departmental approval of written application. Consent for enrollment is based on a written proposal outlining the proposed course of study. Students should consult the department for further information and approval forms.
410. DIRECTED READING IN HUMAN DEVELOPMENT AND FAMILY STUDIES (CREDIT TO BE ARRANGED.) (1-3). Pr., departmental approval. May be repeated for a maximum of three credits.
420. RECENT RESEARCH IN HUMAN DEVELOPMENT AND FAMILY STUDIES (4). Pr., HDF 267 and 301. Synthesis of recent research in human development and family studies with emphasis on studies dealing with family influences on children.
467. PARENT EDUCATION (4). Pr., HDF 301. The principles of working with parents on both an individual and group basis. Laboratory experiences may be arranged.
468. GENDER ROLES AND CLOSE RELATIONSHIPS (3). A critical analysis of women's and men's changing roles in society. Effects of these changes on relationship development, marriage and the family.
473. INFANT DEVELOPMENT (4). Pr., HDF 267, 301 or equivalent. Intensive study of cognitive, social and physical aspects of development from conception to 30 months of age.
475. ADOLESCENT AND EARLY ADULT DEVELOPMENT (4). Pr., HDF 267, 301. The individual from adolescence through early adulthood, emphasizing familial influence on development and behavior. Field assignments are required.
477. FAMILY AND AGING (4). Pr., HDF 306. The interactive nature of the aging process as it relates to the family and its older members with emphasis on the problems of health, finances, housing and leisure time. Laboratory experiences provided.
491. HONORS THESIS (2-6). Pr., membership in University Honors Program; junior or senior standing in HDF. May be repeated three times for a maximum of six credit hours. Thesis will be in the student's area of interest and includes library research, field work, data analysis, scientific writing or other tasks related in advanced independent work. Open only to students in the Honors Program with the consent of the Honors Program Advisor.
497. INTERNSHIP (5-15 HOURS IN A, B, C, D, E OR F). Pr., Students must have a 2.0 GPA in all required HDF courses to enroll and applications for the internship must be submitted to the Internship Director three (3) quarters in advance of the proposed internship quarter. No more than three (3) options may be taken for a total of twenty (20) credits. A. Social Services; B. Human Development and Family Studies; C. Maternal and Child Health; D. Day Care; E. Parent Education; F. Aging; G. Family Economics. Internship arranged on individual basis, supervised by faculty in community agencies, hospitals, clinics, Child Study and Marriage and Family Therapy Centers.
499. SEMINAR (2). Pr., junior or senior standing in HDF. May be repeated up to three times for a maximum of six credit hours. A. Child Development; B. Family Relations; C. Consumer and Family Economics; D. Advanced Research. Advanced Research section requires 3.0 GPA in the major.

ADVANCED UNDERGRADUATE AND GRADUATE

528. CONSUMER ECONOMICS (5). Pr., EC 202 and HDF 200 or departmental approval. Consumption as an economic activity; theory of consumer choice. Consumer's role in the American economy; impact of various market structures on the consumer; consumer protection; economic issues affecting the consumer.
530. FAMILIES AND SOCIAL POLICY (3). Pr., EC 202 and HDF 200 or departmental approval. Investigation of the impact of consumer and family oriented laws and policies on individuals/families. Exploration of individual/family involvement with public policy and legal resources as a means for realizing satisfying lifestyles.

538. STUDY/TRAVEL IN HUMAN DEVELOPMENT AND FAMILY STUDIES (2-8). May be repeated for a maximum of 12 undergraduate credits or eight graduate credits. Pr., Human Sciences core and departmental approval. Concentrated study in HDF in U.S. or foreign locations offering unique resources for investigation in one of these content areas. Lectures presented at prearranged points. Papers required on selected phases.
541. FAMILY FINANCIAL MANAGEMENT (5). Pr., HDF 200 or departmental approval. Family financial planning, including short-term money management, long-term planning, allocation of family resources and use of credit.
547. ADMINISTRATION OF PROGRAMS FOR CHILDREN AND FAMILIES (3). Pr., senior standing in the major or related field, HDF 301 or equivalent. Essential procedures for implementing programs for children and/or families. Topics include housing and equipment, finances and record-keeping, nutrition and health, staffing and community relations.
550. HOSPITALIZED CHILDREN AND THEIR FAMILIES (5). LEC. 4, LAB. 2, Pr., senior standing in the major or related field, HDF 301 or equivalent. Theoretical principles and practical applications of child life programming as it relates to the psychosocial needs of hospitalized children and their families.

COURSES FOR GRADUATE STUDENTS

609. SPECIAL PROBLEMS (1-5). (S-U). Pr., departmental approval and approval of written application by instructor. May be taken more than one quarter. Not to exceed 5 hours of credit toward the minimum of 48 for the M.S. degree. A. Family Relations; B. Child Development; C. Marriage and Family Therapy; D. Parent Education; E. Family Economics.
610. THEORIES OF HUMAN DEVELOPMENT AND FAMILY STUDIES (4). Pr., departmental approval. Cognitive, personal and social development throughout the life cycle, with special attention to the influence of the family on the individual.
611. ADVANCED CHILD DEVELOPMENT (4). Pr., HDF 610 or departmental approval. Advanced study of theoretical and empirical material regarding child development from conception through adolescence, with emphasis on physical and cognitive development.
616. SOCIAL DEVELOPMENT OF CHILDREN (4). Pr., HDF 611 or departmental approval. Theory and research on the acquisition of social behavior by children.
618. DAY CARE AND THE FAMILY: RESEARCH AND ISSUES (4). Pr., HDF 611 or departmental approval. Research and issues concerning the impact of day care on the family unit and children's social, emotional and cognitive development.
620. MARITAL AND FAMILY SYSTEMS (4). Pr. or Coreq., HDF 610 and departmental approval. The family and its effect on personality development.
621. PARENT-CHILD INTERACTION (4). Pr., HDF 610 or departmental approval. Discussion of parent-child interaction literature and evaluation of relevant research literature.
622. DYSFUNCTIONS IN MARRIAGE AND FAMILY (4). Pr., HDF 620. The dynamics and assessment of common dysfunctions in marital and family relationships based on current theory and research.
623. RESEARCH METHODS FOR CHILD AND FAMILY STUDY (4). Pr., HDF 610 or departmental approval. Survey of principles and methods for the study of children and their families.
624. MARRIAGE AND FAMILY THERAPY (4-5). LEC. 4, LAB. 3. Pr., HDF 620 or CED 628 or PG 638. Current theories of marriage and family therapy. Lab covers principles and techniques of interviewing families.
625. HUMAN SEXUAL BEHAVIOR (4). Pr., HDF 620 and 622. Nature of sexual development, normal and abnormal sexual functioning; attitudes toward sex. Treatment of sexual dysfunction.
629. READINGS IN HUMAN DEVELOPMENT AND FAMILY STUDIES (4). (S-U). Pr., HDF 267 or departmental approval. Current literature and research concerning the pre-school child; the school-age child; the adolescent; the young adult; problems of later maturity; changing family patterns; family economic issues.
630. ASSESSMENT OF INDIVIDUAL, COUPLE AND FAMILY SYSTEMS (4). Pr. or Coreq., HDF 623, FED 672 or 673 or departmental approval. In-depth study of issues involved in assessing individual, couple and family systems with emphasis on administration and interpretation of measures typically used in marital and family therapy.
634. THE FAMILY IN THE AMERICAN ECONOMY (3). Pr., EC 200, 202, HDF 528 or departmental approval. Analysis of the family as an economic unit, standards and levels of living; hazards in the family economy. Examination of the economic effect of government policies and programs on the family.
636. FAMILY RESOURCE DEVELOPMENT AND ALLOCATION (3). Pr., EC 200, 202, HDF 634 or departmental approval. Economic analysis of conditions, programs and policies related to development and use of human and non-human resources, with special reference to impact on families and households.
637. PROFESSIONAL ISSUES IN MARRIAGE AND FAMILY THERAPY (3). Pr., departmental approval. History of marriage and family therapy as a profession. Role and function of professional associations, professional licensure, ethics and issues of clinical practice in various settings.
640. MARRIAGE AND FAMILY THERAPY PREPRACTICUM (4). Pr., departmental approval. A. Strategic, B. Structural, C. Behavioral, D. Intergenerational, E. Other. Study and clinical practice with intensive supervision of major approaches to family therapy. Live supervision provided. Must be repeated at least once, representing two different approaches.
660. SEMINAR (1-5). A. Family Relations; B. Child Development; C. Research Techniques; D. Marriage and Family Therapy; E. Parent Education; F. Family Economics.
662. PRACTICUM (2-16). (S-U). All sections may be repeated for a maximum of 8 hours credit. Pr., departmental approval. A. Child Development; B. Family Relations; C. Parent Education; D. Day Care and Programs for Young Children; E. Family Economics.

Industrial Design

664. MARRIAGE AND FAMILY THERAPY PRACTICUM (2-16). May be repeated for maximum of 16 hours credit. Pr., departmental approval. A. Group Supervision; B. Individual Supervision.
680. INTERPERSONAL AND FAMILY DYNAMICS (4). Pr., HDF 610. Theoretical and empirical contributions to the understanding of interpersonal and family relationships, with a focus on processes and dynamics of relationships.
681. RELATIONSHIP DEVELOPMENT I: CHILDHOOD AND ADOLESCENCE (4). Pr., HDF 611, 680. Examination of the development of children's relationships with peers and siblings.
682. RELATIONSHIP DEVELOPMENT II: ADULTHOOD (4). Pr., HDF 680, 681. Examination of adult interpersonal relationships through the stages of initiation, development, maintenance and dissolution.
699. RESEARCH AND THESIS. (CREDIT TO BE ARRANGED.) Required of all students under the Thesis Option in any field.
710. ADVANCED THEORIES OF HUMAN DEVELOPMENT AND FAMILY STUDIES (4). Pr., HDF 610, 680, 681, 682. Integrative framework of major theoretical approaches for analyzing selected topics in human development and family studies.
723. ADVANCED RESEARCH METHODS IN HUMAN DEVELOPMENT AND FAMILY STUDIES (4). Pr., HDF 623, FED 673. In-depth examination of research methods, designs and data analytic strategies commonly used by family and child development researchers.
799. RESEARCH AND DISSERTATION (CREDIT TO BE ARRANGED.)

Industrial Design (DSN)

Professor Lundell, *Head*

Associate Professors Lau, Prange and Smith

Assistant Professors Bartlett, Britnell and Peters

100. DESIGN IN MODERN SOCIETY (3). The industrial design profession and its impact on modern society. Review of products, designers, manufacturing and marketing techniques, educational systems and career opportunities.
110. DRAWING SYSTEMS (5). Pr., acceptance into DSN curriculum. Visual exploration, analysis and communication of mechanical design principles.
111. PERSPECTIVE DRAWING (5). Pr., DSN 110. Introduction to drawing systems utilized in product design and fabrication.
112. DRAWING FOR DESIGN AND PROD. (5). Pr., DSN 111. Advanced product design communication with emphasis on the production processes.
200. RESEARCH PROTOTYPE FABRICATION (1-2). Pr., PIND standing. Instruction in the fabrication of three-dimensional prototype models utilizing various materials.
210. PRINCIPLES OF INDUSTRIAL DESIGN I (5). LEC. 2, STUDIO 6. Visual communication. Perception theory, design fundamentals; color, figure organization, movement and balance, proportion and rhythm.
211. PRINCIPLES OF INDUSTRIAL DESIGN II (5). LEC. 2, STUDIO 6. Pr., DSN 210 and departmental approval. An extension of principles encountered in Industrial Design 210. Analysis of industrial design fundamentals.
212. PRINCIPLES OF INDUSTRIAL DESIGN III (5). LEC. 2, STUDIO 6. Pr., DSN 211 and departmental approval. Structural and functional relationship of design elements; convenience, utility, safety, maintenance.
221. MATERIALS & TECHNOLOGY (5). Pr., sophomore standing. Properties and use of various materials in manufacture and a study of machine and tool processes used by industry. Survey from the designer's viewpoint.
222. INDUSTRIAL DESIGN METHODS (5). Pr., sophomore standing. Methods and organizational procedures used in the analysis and solutions of design problems. Survey of philosophies and theories of design.
307. ANTHROPOMETRY (5). Pr., DSN 212, 222. Survey and introduction to the field of body measurements and movements in relation to design.
308. DESIGN WORKSHOP (5). LEC. 2, LAB. 8. Pr., DSN 210, 212. Modelmaking and creative modeling. Study models, presentation models, mock-ups, prototypes.
310. CONCEPT DEVELOPMENT (6). LEC. 2, STUDIO 8. Pr., DSN 212, 221, 222. Concept development using drawing and rendering skills for idea communication and presentation.
311. PACKAGING (6). LEC. 2, STUDIO 8. Pr., DSN 221, 222, 310. Packaging, trademark and corporate identity programs. Exhibition and display fixtures.
312. PRODUCT DESIGN (6). LEC. 2, STUDIO 8. Pr., DSN 311. Product design utilizing principles of design methodology from idea stages through working models.
385. SEMINAR IN DSN (5). Pr., DSN 212, junior standing. Topics in industrial design. Computer software
410. SYSTEMS (6). LEC. 2, STUDIO 8. Pr., DSN 312, 307, 308. Design or redesign of products and systems.
411. ADVANCED PRODUCTION (6). LEC. 2, STUDIO 8. Pr., DSN 410. Design or redesign of products and systems of advanced complexity.
412. INDUSTRIAL DESIGN THESIS (6). LEC. 2, STUDIO 8. Pr., DSN 411. Project involving all design phases; project of the student's own selection and approved by the instructor. Presentation of graphics, models and written explanations, and oral presentation before a Design Jury. Thesis material may be retained by the department. A portfolio submission is required for course completion.
415. HISTORY OF INDUSTRIAL DESIGN I (5). Pr., DSN 312. Design from the development of the first human artifacts to the Industrial Revolution and beyond with emphasis on the relation between design and science, art, technology and the humanities.

420. PROFESSIONAL PRACTICE (5). Pr., 4th year standing. Office organizations, contracts, reports, professional ethics, time planning, product litigation, cost estimating, patent policy and related research areas.

ADVANCED UNDERGRADUATE AND GRADUATE

485. SEMINAR IN DSN (5). Pr., 4th year standing. Development of individual portfolio. Research, design, reports, on approved topics. May be repeated for a maximum of 10 hours.
516. HISTORY OF INDUSTRIAL DESIGN II (5). Design from the beginning of artifacts to the first Industrial Revolution, with emphasis on relationship between design and sciences, art, technology and the humanities.
585. SPECIAL PROBLEMS (2-6). Development of individual projects. Research, design and reports on approved topics.
586. CASE STUDIES IN DESIGN (5). Design projects undertaken by industry will be studied by examination of artifacts and records, by interviews with professionals responsible for the phases of the projects, and by class discussions of this data and its implication. Focus on the sociocultural relevancy of the artifacts.
- 601-602. PRINCIPLES OF DESIGN (5-5). LEC. 2, LAB. 6. Detailed study of the communication principles of form qualities with emphasis of these aesthetic principles to the technical and human factors of artifacts and to the human environment.
605. DESIGN MANAGEMENT (5). LEC. 3, LAB. 4. Detailed study of the Industrial Design project management and development with emphasis on the interrelational management concepts of research, product planning, production and marketing.
606. HUMAN FACTORS IN DESIGN (5). LEC. 3, LAB. 4. Theoretical and empirical examination of human factors (anthropometrics, biotechnology, engineering psychology, behavioral cybernetics, ergonomics) as applied to man-machine environment systems.
- 608-609. AESTHETICS IN DESIGN (5-5). LEC. 3, LAB. 4. Aesthetics in the context of the designed environment encompassing: nonverbal communication; object language semiotics; gestalt and perception systems; information aesthetics and consumer product safety.
610. DESIGN THEORIES (5). LEC. 3, LAB. 4. Examination of design theories and philosophies related to technical artifacts in man-machine systems. Comparative studies of unifying theories in art, science, design, technology and the humanities.
- 611-612. DESIGN METHODOLOGY (5-5). LEC. 3, LAB. 4. Industrial Design Methodologies and scientific methods employed in research, analysis, synthesis and evaluation in comprehensive design problems. Emphasis on creativity and innovation.
- 613-614. SYSTEMS DESIGN (5-5). LEC. 3, LAB. 4. Systems approach and interdisciplinary team work to design problems, inquiries into details of subsystems, components and parts, with emphasis on the relation of the performance of technical systems to optimal human factor effects.
- 620-621-622-623. INDUSTRIAL DESIGN (5-5-5-5). LEC. 1, LAB. 8. Synthesizing studies in research, analysis and application based on interdisciplinary concept. The project content is according to the student's interest from one or several of the following design areas: Product Design, Industrialized Housing, Package Design, Corporate Communications, Transportation Design, Exhibition Design and Systems Implementation. Emphasis on the relation of products and systems to those who use them.
699. RESEARCH AND THESIS. (CREDIT TO BE ARRANGED.) May be taken more than one quarter.

Industrial and Systems Engineering (ISE)

Professors Unger, Head, Bulfin, Black, Hool, Maghsoodloo and Park

Associate Professor Thomas

Assistant Professors Meller, Nembhard, Sox and Vance

Adjunct Instructor Kriel

General Curriculum, CLA, students (those with undeclared majors) may enroll only with departmental consent.

302. OCCUPATIONAL ERGONOMICS AND SAFETY (5). Basic principles of occupational ergonomics and safety engineering in the analysis, evaluation and design of industrial work areas and processes which include human operators.
310. INDUSTRIAL AND SYSTEMS ENGINEERING (3). LEC. 2, LAB. 2. Pr., MH 160 or equivalent. Overview of ISE concepts and issues important to the design and operation of industrial and service systems.
331. PROBABILITY FOR ENGINEERS (3). Coreq., MH 264. Basic probability, random variables and distribution functions.
332. ENGINEERING STATISTICS I (3). Pr., ISE 331. Statistical inference, sampling distributions and their applications. Emphasis is on statistical inference.
333. ENGINEERING STATISTICS II (3). Pr., ISE 332. One- and two-way analysis of variance. General factorial experiments, confounding in blocks, fractional factorials, regression and correlation. Emphasis is on factorial experiments.
341. OPERATIONS RESEARCH I: MODELS (3). LEC. 2, LAB. 3. Pr., CSE 120, ISE 331, MH 264. Formulation, interpretation and implementation of mathematical models in operations research, including linear, non-linear, dynamic and integer programming, networks, decision trees and queues.

343. OPERATIONS RESEARCH II: CONCEPTS AND METHODS (3). Pr., ISE 341, MH 266. An introduction to the underlying concepts of operations research methodology. Emphasis is on optimization techniques, stressing optimality conditions and how they are used to develop algorithms. Emphasis is on algorithms for linear programming.
360. ENGINEERING ECONOMIC ANALYSIS (3). Pr., MH 264, CSE 120. The development of principles required in engineering economy studies and other decision-making oriented courses. Topics include interest and interest formula derivations, economic decision criteria, capital budgeting, depreciation methods, tax considerations, replacement analysis and inflation.
380. MANUFACTURING ENGINEERING I: MATERIALS AND PROCESSES (4). LEC. 3, LAB. 3. Pr., EGR 207. Engineering science and design of manufacturing materials, processes and systems.
390. SEMINAR IN INDUSTRIAL AND SYSTEMS ENGINEERING (1). LEC. 1. Pr., junior standing in ISE. Discussion of current problems, professional practice, and professional opportunities. (Restricted to Industrial and Systems Engineering majors and is to be taken in the third or fourth quarter prior to graduation.)
402. METHODS ENGINEERING AND WORK MEASUREMENT (3). Pr., ISE 332. Classical industrial and systems engineering procedures related to the design of efficient work methods. Analysis of the work measurement process and design of labor content assessment systems.
422. OPERATIONS PLANNING AND CONTROL I (3). LEC. 2, LAB. 3. Pr., ISE 333, 341, 360. Analytical methods for operational planning and control, including forecasting systems, inventory control systems and aggregate planning.
425. OPERATIONS PLANNING AND CONTROL II (3). Pr., ISE 422. Functions of operational control, including models for production planning, scheduling and control, line balancing, manufacturing resource planning and project management systems.
433. STATISTICAL QUALITY CONTROL (3). Pr., ISE 332. Control charts for variables and for attributes. Methods for quality improvement. Acceptance sampling by attributes and by variables. Emphasis on statistical process control.
456. SIMULATION (3). LEC. 2, LAB. 3. Pr., CSE 120, ISE 333. Simulation procedures for solving complex systems analysis problems. Emphasis on random processes, model building, and construction of computer simulation models.
480. MANUFACTURING ENGINEERING III: TOOL DESIGN (3). LEC. 2, LAB. 3. Pr., ISE 380 or equivalent. The design of workholding devices (jigs and fixtures and hands of robots) and blanking and piercing dies, including the fundamentals of tolerances, locating, and clamping principles.
482. MANUFACTURING SYSTEMS DESIGN (3). Pr., ISE 425. Design, analysis and control of manufacturing systems and advanced manufacturing technologies, including JIT, GT, TQM, CIM and manufacturing cells.
484. PROBLEMS IN MACHINING (5). LEC. 3, LAB. 4. Pr., ISE 380. Advanced phases of metal machining with emphasis on production machines and accessories.
- 490-491-492. INDUSTRIAL AND SYSTEMS ENGINEERING PROBLEMS (1-5). Pr., department head approval. Individual student endeavor under staff supervision involving special problems of an undergraduate nature in Industrial and Systems Engineering. Interested student must submit written proposal to department head.
- 493-494-495. INDUSTRIAL AND SYSTEMS ENGINEERING SPECIAL TOPICS (1-5). Pr., departmental approval. Topics courses of an undergraduate nature pertinent to Industrial and Systems Engineering. Prerequisites will be determined and announced for each offering.
497. SENIOR DESIGN PROJECT I (3). LEC. 1, LAB. 6. Pr., ISE 331. Coreq., ISE 302, 425, 433. Capstone course in which undergraduate course work principles are brought to bear upon a design problem in a cooperating industry or institution. (Should be taken the quarter immediately prior to the taking of ISE 498.)
498. SENIOR DESIGN PROJECT II (3). LAB. 9. Pr., ISE 497. Continuation of the design problem begun in ISE 497. Completion of the project and written and oral presentation of the results to the cooperating organization. (Should be taken during student's final quarter.)
499. HONORS THESIS (1-6). Pr., department head approval. Individual student endeavor consisting of directed research and writing of honors thesis. (ISE Honors Program students only. May be repeated once for a maximum of six total credit hours.)

COURSES NOT OPEN TO ISE MAJORS

330. TOTAL QUALITY ENGINEERING (3). Pr., junior standing, MH 162 or MN 301 or equivalent statistics course. Introduction to concepts and methods of quality engineering. Emphasizes TQM, ISO 9000, QFD and statistical tools of quality. Open to all students except those in ISE.
430. ENGINEERING STATISTICS (5). Pr., MH 264. Basic probability, random variables, discrete and continuous distributions, sampling distributions, hypothesis testing, estimation, regression and correlation, analysis of variance, testing goodness of fit. (Not open to students with credit in ISE 331.)
440. OPERATIONS RESEARCH (3). Pr., MH 266, ISE 430 or equivalent or concurrently. Model construction, linear programming, network models, dynamic models, stochastic models, queueing theory, decision theory and simulation. (Not open to students with credit in ISE 343.)

ADVANCED UNDERGRADUATE AND GRADUATE COURSES

501. SAFETY ENGINEERING (3). Pr., ISE 302. Occupational safety engineering with emphasis on control of hazardous materials, fire prevention and safety considerations in production facility design and maintenance.
502. SYSTEMS ANALYSIS FOR SAFETY (3). Pr., ISE 501, 331 or 430, or equivalent. Systems safety engineering analysis techniques including fault-tree, reliability and cost benefit analysis.

504. RESEARCH METHODS IN OCCUPATIONAL SAFETY AND HEALTH (3). Pr., ISE 302 or equivalent. Contemporary and developmental ergonomics and safety research methods in laboratory and occupational settings.
523. FACILITIES DESIGN (3). Pr., ISE 341. Coreq., ISE 360. Models for facility design seeking to efficiently balance the needs of production, material handling, information flow and the human operators.
525. INVENTORY CONTROL (3). Pr., ISE 343, 422, 433. Application of quantitative methods to the control of industrial inventories.
529. OPERATIONAL CONTROL SYSTEM DESIGN (3). Pr., ISE 425. The design of operational planning and control systems. Integration of individual systems functions. Concept of total systems optimization.
533. OFF-LINE QUALITY CONTROL (3). Pr., ISE 333. Taguchi's quality loss function, three stages of quality design and analysis of Taguchi's signal-to-noise ratio.
534. QUALITY SYSTEMS DESIGN AND IMPLEMENTATION (3). Pr., ISE 533 or departmental approval. On-line and off-line quality engineering methods and their use in integrated total quality control systems.
536. SAMPLING AND SURVEY TECHNIQUES (3). Pr., ISE 333. Theory and application of statistical sampling and survey methods, with emphasis on methods optimization.
538. RELIABILITY ENGINEERING (3). Pr., ISE 333. Reliability, maintenance, and replacement, with emphasis on quantitatively descriptive methods to be used for problem solving.
541. DETERMINISTIC OPERATIONS RESEARCH (3). Pr., ISE 343. In-depth treatment of deterministic operations research, particularly the concepts and methodology of non-linear, dynamic, integer and network optimization.
542. DYNAMIC PROGRAMMING (3). Pr., ISE 541. Theory and methods of dynamic programming will be presented. Specific applications will be discussed.
545. PROJECT MANAGEMENT (3). Pr., ISE 440 or 343. Project management and development with emphasis on operations research methods and cost analysis. Applications of CPM, PERT, and GERT to project management.
547. SEARCH METHODS FOR OPTIMIZATION (3). Pr., MH 264 and senior standing. Single and multivariate search techniques and strategies which are used in finding the optimum of discrete or continuous functions about which full knowledge is not available.
551. STOCHASTIC OPERATIONS RESEARCH (3). Pr., ISE 332, 343. Stochastic operations research models with emphasis on model formation, solution and interpretation of results. Emphasis on stochastic processes, queueing theory and their applications.
560. INTERMEDIATE ENGINEERING ECONOMIC ANALYSIS (3). LEC. 3. Pr., ISE 360. Continuation of ISE 360. Emphasis on cost estimating techniques and applications of engineering economic principles to various aspects of industrial and systems engineering problems.
572. PRINCIPLES OF INTERACTIVE COMPUTER GRAPHICS (3). Pr., MH 266 or CSE 120 or equivalent, and junior standing. Computer graphics with emphasis on engineering applications. Topics include hardware characteristics of graphics system, mathematical elements and programming techniques for two- and three-dimensional graphics, user interface design and selected engineering applications.
580. COMPUTERS IN CONTROL ENGINEERING (3). Pr., departmental approval. Computer use in closed-loop feedback control and sequential control. Basic microprocessor architecture and operation, sensors and instrumentation, computer interface techniques and introductory discrete control theory.
588. MANUFACTURING ENGINEERING II: GAGES AND MEASUREMENTS (3). LEC. 2, LAB. 3. Pr., ISE 380. The science of measurement as applied to production and inspection of industrial products.
- 590-591-592. INDUSTRIAL AND SYSTEMS ENGINEERING PROBLEMS (1-5). Pr., department head approval. Individual student endeavor under staff supervision involving special problems of an advanced undergraduate or graduate nature in ISE. Interested student must submit written proposal to department head.
- 593-594-595. INDUSTRIAL AND SYSTEMS ENGINEERING SPECIAL TOPICS (1-5). Pr., departmental approval. Topics courses of an advanced undergraduate or graduate nature pertinent to ISE. Prerequisites will be determined and announced for each such offering.

COURSES FOR GRADUATE STUDENTS

601. ANALYSIS AND PREVENTION OF ENVIRONMENTAL WORK STRESS (3). Pr., ISE 302 or equivalent. Evaluation of the response of the worker to the physical work environment. Emphasis is on design to minimize stress.
605. FUNDAMENTALS OF INDUSTRIAL HYGIENE (3). Pr., ISE 302 or equivalent. Introduction to the basic concepts and techniques of industrial hygiene with emphasis on the industrial hygiene/safety interface.
606. OCCUPATIONAL SAFETY PROGRAM DESIGN AND EVALUATION (3). Pr., ISE 302 or equivalent. Design and evaluation of the occupational safety function in manufacturing environments.
607. OCCUPATIONAL BIOMECHANICS (3). Pr., ISE 302, EGR 235. Use of biomechanics in the evaluation and design of work activities. Emphasis on manual materials handling, tool design and repetitive motion trauma.
608. DESIGN OF NON-STRENUOUS TASKS (3). Pr., ISE 302. Ergonomics considerations in the design of non-strenuous tasks. Emphasis is placed upon the minimization of human error and task-induced stress.
609. ANALYSIS OF PHYSIOLOGICAL WORK STRESS (3). Pr., ISE 302. Evaluation of the physiological response of the body to occupational activities with emphasis upon task design and employee selection/placement.
622. MATERIALS HANDLING SYSTEMS (3). Pr., ISE 343, 456. Quantitative analysis and design of material handling systems. Quantitative methods and case studies.

623. ADVANCED FACILITIES DESIGN (3). Pr., departmental approval. Quantitative methods used to design production and service facilities are emphasized. Case studies.
624. INVENTORY AND PRODUCTION CONTROL SYSTEMS (3). Pr., ISE 425. Advanced topics in production control and inventory theory. The relationships between production and inventory will be discussed.
625. SCHEDULING: THEORY AND APPLICATIONS (3). Pr., ISE 440 or 343. Network-based sequencing and scheduling problems are discussed. Numerous algorithms are presented for scheduling facilities to achieve one or more of several desired objectives within precedence and resource constraints. Scheduling areas discussed include projects, assembly lines, flow shops and job shops.
630. ADVANCED STATISTICAL METHODS FOR ENGINEERS I (3). Pr., ISE 333 or equivalent. Basic concepts of statistical experimental design including randomization methods, analysis of variance methods, mathematical derivation of expected mean squares, multiple comparison tests and the Bennett and Franklin algorithm.
631. ADVANCED STATISTICAL METHODS FOR ENGINEERS II (3). Pr., ISE 630. Extension of ISE 630, with emphasis on analysis of variance methods.
632. ADVANCED STATISTICAL METHODS FOR ENGINEERS III (3). Pr., ISE 630. Elaboration of basic statistical methods for engineers, with emphasis on a more theoretical study of multiple linear regression and the optimization of multiple linear regression methods.
633. ADVANCED ON-LINE QUALITY CONTROL (3). Pr., ISE 533. Advanced treatment of statistical methods for process control and acceptance sampling and their role in the modern industrial environment.
635. NONPARAMETRIC STATISTICS (3). Pr., ISE 333. Theory and application of several nonparametric and distribution-free statistical methods with emphasis on engineering applications.
642. ADVANCED LINEAR PROGRAMMING (3). Pr., ISE 343. Continuation of ISE 343 with emphasis on theory. Revised simplex, dual simplex, parametric programming, decomposition and applied problems.
651. MARKOV CHAINS (3). Pr., ISE 341. Finite and continuous Markov Chains, Poisson and Weiner Processes. Applications will be discussed.
656. INTERMEDIATE SIMULATION (3). Pr., ISE 456. Intermediate simulation techniques including an in-depth study of a simulation language.
662. ADVANCED ENGINEERING ECONOMY (3). Pr., ISE 343, 360. Engineering and economic aspects of project design and analysis. Advanced treatment is given to: capital budgeting, financing manufacturing organizations, risk and sensitivity analysis, mathematical programming approach to investment decisions.
674. MANAGEMENT INFORMATION DECISION SYSTEMS (3). Pr., departmental approval. Analysis of organizations for information requirements, information flow, data storage and usage and total information systems.
680. DISCRETE PROCESS CONTROL AND DYNAMICS (3). Pr., departmental approval. Sampled-data control systems and computer control topics. Representation of discrete industrial processes.
682. INTEGRATED MANUFACTURING/PRODUCTION SYSTEMS (4). Pr., ISE 380 or equivalent. Modern manufacturing systems and how they are integrated into production systems for the manufacture of quality products at lowest cost.
683. ADVANCED MANUFACTURING PROCESSES (3). Pr., ISE 380, ME 485 or equivalent. Theory and practice of machining of metals, selection of materials, analysis for economical and reliable processing.
- 690-691-692. INDUSTRIAL AND SYSTEMS ENGINEERING PROJECTS (1-5). Pr., department head approval. Individual student endeavor under faculty supervision involving special problems of a graduate nature in industrial and systems engineering. Interested student must submit written proposal to department head.
- 693-694-695. INDUSTRIAL AND SYSTEMS ENGINEERING SPECIAL TOPICS (1-5). Pr., departmental approval. Topics courses of a graduate nature pertinent to industrial and systems engineering. Prerequisites will be determined and announced for each offering.
696. SEMINAR (1). Pr., ISE graduate student standing. Presentation and discussion of current ISE research activities by students, faculty and guests. Must be taken at least one quarter, but cannot be used in the student's plan of study to apply toward the minimum number of hours for the degree.
698. M.I.S.E. DESIGN PROJECT. (CREDIT TO BE ARRANGED.) May be taken more than one quarter.
699. RESEARCH AND THESIS. (CREDIT TO BE ARRANGED.) May be taken more than one quarter.

COURSES PRIMARILY FOR DOCTORAL STUDENTS

701. CURRENT TOPICS IN OCCUPATIONAL SAFETY RESEARCH (3). Pr., ISE 502. Topics of current interest in occupational safety research are reviewed. Occupational safety research methodology and research priorities are evaluated.
706. ADVANCED TOPICS IN ASSESSMENT/DESIGN OF STRENUOUS WORK (3). Pr., ISE 601, 607 and 609. Evaluation of current research activities in the areas of work physiology, biomechanics and environmental stress.
707. EVALUATION AND DESIGN OF HUMAN INFORMATION PROCESSING TASKS (3). Pr., ISE 608. Evaluation of current research in the area of human information processing. Emphasis is on human decision behavior modeling.
725. ADVANCED SCHEDULING THEORY (3). Pr., ISE 625. A survey of models and methodologies in the areas of sequencing and scheduling are presented. Models covered include: the single processor model, parallel processor model, flow shops and job shops. Methodologies covered include: integer and dynamic programming, branch and bound and other enumeration procedures as well as simulation and sampling and search methods.
731. TIME SERIES (3). Pr., ISE 333. Stationary stochastic processes, time series analysis with emphasis on spectral density functions and applications will be discussed.
741. NON-LINEAR PROGRAMMING (3). Pr., ISE 642. Covers quadratic programming, separable programming, gradient methods and integer programming.

742. INTEGER PROGRAMMING (3). Pr., ISE 343 and 642. Integer programming and discrete optimization emphasizing applications, formulation, solution techniques and theory.
744. OPTIMIZATION THEORY FOR LARGE SYSTEM (3). Pr., ISE 741. Large problems with special structures; decomposition principles, many column problems, relaxation procedures in linear programming, generalized upper bounding, partitioning procedures and applications.
751. QUEUEING THEORY (3). Pr., ISE 333 or ISE 430, 651. Mathematical models of queueing, with applications to problems such as materials flow, inventory policy and service center design. Simulation solutions to queueing networks.
756. ADVANCED SIMULATION PROBLEMS (3). Pr., ISE 456. Journal readings of applications simulation and development of procedure to solve large-scale, realistic simulation problems.
760. DECISION AND GAME THEORY (3). Pr., ISE 343 or 430. Classification of decision problems, Bayes risk, utility theory and its applications, optimal strategies for rectangular games and use of linear programming in solving zero-sum games.
- 790-791-792. INDUSTRIAL AND SYSTEMS ENGINEERING PROBLEMS (1-5). Pr., Individual student endeavor under faculty supervision involving special problems of an advanced graduate nature in industrial and systems engineering. Interested students must submit written proposals to the department head.
- 793-794-795. INDUSTRIAL AND SYSTEMS ENGINEERING SPECIAL TOPICS (1-5). Pr., departmental approval. Topics courses of an advanced graduate nature pertinent to industrial and systems engineering. Prerequisites will be determined and announced for each offering.
799. RESEARCH AND DISSERTATION. (CREDIT TO BE ARRANGED.) May be taken more than one quarter.

Interdepartmental Education (IED)

Included in this section are program areas and course listings designed and taught on the interdepartmental basis.

517. PROFESSIONAL WRITING IN EDUCATION (2). Education discourse; strategies and techniques in educational writing; reference sources; the preparation of manuscripts for publication in professional journals.
605. PRACTICUM IN EDUCATIONAL ASSESSMENT AND PRESCRIPTIVE REPORT WRITING (5).
750. ALTERNATIVE RESIDENCE SEMINAR (2-2-2). Required of students in an alternative residence plan. These students must complete this three quarter sequence during the fall, winter and spring quarters. Credit does not count toward minimum requirements for the Doctor of Education degree.

Journalism (JM)

Professor Brown, *Head*

Associate Professors Johnson, Morgan, Strain and Williams

Assistant Professors Fairley, Mercer and Sheppard

Freshman English is prerequisite for all journalism courses except JM 101.

101. NEWSPAPER STYLE (3). Required for all journalism and corporate journalism majors and minors. The AP Stylebook and common errors in word selection in newspaper writing.
111. NEWSPAPER LAB (1). Pr., JM 101. (S-U grading only). Required for all journalism and corporate journalism majors and minors. Student will work a minimum of 20 hours for *The Auburn Plainsman* in reporting, writing, editing or page makeup.
221. BEGINNING NEWSWRITING (5). Pr., JM 101; reasonable typewriting skills. Introduction to newswriting, newspaper style and mechanical practice.
304. INTRODUCTION TO PUBLIC RELATIONS (5). Pr., JM 101. Spectrum of the field of public relations. Communication skills and technologies for public relations are explored. Credit for this course precludes credit for PR 304.
313. REPORTING (5). Pr., JM 221; reasonable typewriting skills. Technical aspects of reporting and newsgathering methods.
314. EDITING (3). Pr., JM 221. Methods of editing copy, writing headlines and proof reading.
315. BASIC JOURNALISM (3). Not to be used for a major or minor in journalism. Introduces practices of news coverage and writing.
321. NEWSPAPER DESIGN (5). Pr., JM 221. Typography and design with practice applications in putting together newspaper pages.
322. FEATURE WRITING (5). Pr., JM 221 or departmental approval. Gathering material for the writing of "human interest" and feature articles for newspapers and magazines, with consideration given to the marketing of manuscripts.
323. NEWSPAPER MANAGEMENT (5). Pr., JM 221 and 321. Procedures, policies, ethical considerations and problems in producing the community newspaper.
404. PUBLIC RELATIONS CASE STUDIES (5). Pr., JM 304 or PR 304 or departmental approval. Investigation and analysis of public relations problems through case studies. Credit for this course precludes credit for PR 404.
421. PHOTO-JOURNALISM (5). Uses and processes of photography in the newspaper and magazine field. Operation of press cameras and the technique of developing, printing and enlarging of pictures are covered.

Management

- 422-423. JOURNALISM WORKSHOP (1-1). Pr., JM 313, 314, 321, 322, departmental approval. A two-quarter course giving practical experience in preparation of newspaper, radio, television, and magazine copy through supervised work. The student is expected to work 10 hours per week.
425. JOURNALISM INTERNSHIP (4). Pr., JM 313, 314, 321, 322, departmental approval. Full-time internship of at least 10 weeks with an approved publication, serving as a regular staff member under the direction of the editor.
435. MAGAZINE CONCEPTS (5). Pr., JM 221. Methods and problems of publishing the popular and trade magazine.
465. HISTORY AND PRINCIPLES OF JOURNALISM (5). Development of the American press, principles and ideals of modern journalism and law of the press.
470. FREELANCE FEATURE WRITING (3). Pr., JM 314, 322. Production and selling of ideas, articles and photographs in local markets and to national publications.
475. JOURNALISM SPECIAL STUDIES (1-5). Pr., departmental approval. Research and analysis of specific journalistic problems. Or lectures and seminars by visiting professional journalists.
485. ADVANCED REPORTING (3). Pr., JM 313, 314, 321, 322, departmental approval. Developing and writing news stories under deadline pressure; investigative and interpretive reporting.
490. HONORS READINGS AND SPECIAL TOPICS (3-6). Pr., admission to University Honors Program and junior or senior standing. May be repeated for a maximum of six hours. Open only to students in the University Honors Program with consent of the Honors Program Advisor.
491. HONORS THESIS (1-4). Pr., admission to University Honors Program and junior or senior standing. Open only to JM and JMC students in the University Honors Program with consent of the Honors Program Advisor and the journalism department head.

Laboratory Technology (LT)

Associate Professor Kohl

Affiliate Associate Clinical Professors Adams, Bridger, Burgert, Davis and Patterson
Program Coordinator Milly

Affiliate Clinical Instructors Chapkaphak, Crider, Chappell, Jackson, Plagge and Young

101. ORIENTATION (1). Fall, Winter. Aims, objectives and requirements for careers in medical and laboratory technology.
301. HEMATOLOGY (5). LEC. 3, LAB. 6. Pr., CH 207 or departmental approval. Origin, maturation, morphology and function of blood cells; theory of hemostasis; routine hematological laboratory techniques.
401. ADVANCED HEMATOLOGY (5). LEC. 3, LAB. 6. Pr., LT 301. Advanced study of lymphohematopoietic and hemostatic disorders; laboratory techniques for evaluation and diagnosis of blood disorders.
405. IMMUNOLOGY II (5). LEC. 3, LAB. 6. Pr., MB 543 or departmental approval, junior standing. Immunogenetics, clinical significance of blood group antigens and antibodies, theory and techniques of the serological study of human blood groups.
422. HOSPITAL LABORATORY PRACTICE (5). LAB. 15. Pr., LT 301 or departmental approval. Practice applications of the principles, procedures, and techniques encountered in hospital laboratories.
525. CLINICAL LABORATORY INSTRUMENTATION (5). LEC. 3, LAB. 6. Pr., CH 519 or 508 or departmental approval. Theoretical and practical application of continuous flow analysis, atomic absorption spectrophotometry, radioimmunoassay and chromatographic techniques used in the analysis of body fluids.

Management (MN)

Professors Armenakis, Boulton, Carr, Feild, Giles, Holley,
Mitra, Sankar, Sauser (Adjunct), Snyder and Swamidass

Associate Professors Niebuhr, Head, Byrd, Davis, L. Gardiner, S. Gardiner, Harris, Norris,
Oswald, Rainer, Raymond, Shafer, Sutton, and Wolters

Assistant Professors Ford, Marshall, Nembhard, Stanwick and Uzumeri
Adjunct Instructor Hannem

A 2.0 GPA is required for enrollment in any Business course at the 300-level or above. This rule applies to both Business and non-Business students. An earned C or above is required for prerequisites for all MIS courses at the 400 and 500 level.

207. INTRODUCTION TO COMPUTER PROGRAMMING (5). Pr., 10 hours mathematics and sophomore standing. The computer as a tool in solving business problems, using an appropriate programming language in both a time shared and batch processing environment.
301. BUSINESS AND ECONOMIC STATISTICS I (5). Pr., CSE 100 or equivalent, MH 169 or equivalent. Descriptive statistics; probability; probability distributions; normal distribution; introduction to statistical inference making, confidence intervals, hypothesis testing; linear regression analysis.
307. BUSINESS COMPUTER APPLICATIONS (5). Pr., CSE 100, MN 314. Language and file structures for computer-based business applications using a major business language. Students will write computer programs on individual and team projects.

308. ADVANCED PROGRAMMING AND APPLICATIONS (5). Pr., an earned grade of C or better in MN 307. Builds on the business programming language fundamentals learned in MN 307. Language and file structure systems. Introduces advanced applications using these structures, such as object-oriented, visual languages for faster development. Microcomputer-based languages will be explored.
310. PRINCIPLES OF MANAGEMENT (5). Pr., junior standing. Management functions and the application of management principles in organizations.
314. INTRODUCTION TO MANAGEMENT INFORMATION SYSTEMS (2). Pr., CSE 100 and junior standing. The role of computer-based information in business. Covers systems concepts, information management and decision-making concepts related to information systems.
342. HUMAN RESOURCES MANAGEMENT (5). Pr., MN 310, junior standing. Management of labor, dealing with selection, training, placement, turnover, payment policies, employee representation, etc.
346. ORGANIZATIONAL BEHAVIOR (5). Pr., MN 310, junior standing. Analysis and application of theories and techniques for understanding, prediction, and management of human behavior in the organizational context.
374. BUSINESS AND ECONOMIC STATISTICS II (5). Pr., MN 301 or equivalent, junior standing. Simple linear regression analysis, inferences and predictions from model; multiple regression analysis; experimental design and analysis of variance; goodness of fit tests; nonparametric tests.
375. NONPARAMETRIC STATISTICS (3). Pr., MN 301. The analysis of business and economic data by distribution-free statistical methods.
380. PRINCIPLES OF OPERATIONS MANAGEMENT (5). Pr., MN 301, 310, junior standing. Modern scientific management as applied in the actual control and operation of industrial enterprises.
381. MANAGEMENT DECISION MAKING (5). Pr., MN 301, junior standing. Computer-based quantitative modeling techniques for aiding managerial decision-making.
382. OBJECT-ORIENTED BUSINESS APPLICATIONS (5). Pr., MN 307, 308, junior standing. Analysis, design and implementation of object-oriented information systems for business organizations; use of various object-oriented tools for business.
385. PRODUCTIVITY MANAGEMENT (5). Pr., MN 380, junior standing. Application of management procedures and techniques to analyze and control production methods and processes.
386. MATERIALS MANAGEMENT I (5). Pr., MN 380, junior standing. Management practices as applied to the acquisition, inventory, utilization and distribution of materials in industry.
387. MATERIALS MANAGEMENT II (5). Pr., MN 386, junior standing. Advanced theory and principles of materials management, including implementation in real systems.
400. STUDENT INTERNSHIP PROGRAM (1-10). Pr., junior standing and selection by the committee directing the Management Department Intern Program. (S-U graded).
401. ANALYSIS AND DESIGN OF BUSINESS INFORMATION SYSTEMS (5). Pr., an earned grade of C or better in MN 307. General systems techniques, systems analysis and design, database considerations, modern developments, project planning and control, total system integration.
404. TELECOMMUNICATIONS MANAGEMENT (5). Pr., an earned grade of C or better in MN 307. Fundamentals of telecommunications and data communications technologies. Provides an understanding of voice communications and data networks, protocols, standards and management. Gives the student a basis for making a business decision in the use of this technology.
405. INFORMATION RESOURCE MANAGEMENT (5). Pr., an earned grade of C or better in MN 404. Information Resource Management (IRM) provides an investigation into the management and use of information systems and technology as strategic resources to the organization.
410. INTERNATIONAL BUSINESS MANAGEMENT (5). Pr., EC 202, 200 or 203, MN 310, MT 331, FI 361, junior standing. Management of multinational firms which own subsidiaries in several countries.
414. ENTREPRENEURSHIP (5). Pr., AC 211, 212, FI 361, EC 202, 200 or 203, MN 301, 310, MT 241, 331. Elements of entrepreneurship as they relate to the planning and development of new ventures. Emphasis on the use of decision-making skills in bringing a new business idea to fruition.
415. SMALL BUSINESS MANAGEMENT (5). Pr., MN 414. A consulting opportunity which provides a test of the student's ability to apply skills and knowledge to the problems of an existing small business.
420. INDUSTRIAL PROCUREMENT (5). Pr., MN 380, junior standing. Role, procedures, responsibilities, and management of materials acquisition function in industry. Credit cannot be received for MT 434 and MN 420.
421. MANAGEMENT OF SERVICE OPERATIONS (4). Pr., MN 380. Analysis of operations management activities in service delivery systems. Emphasis placed on a total systems approach to service management.
440. ORGANIZATION THEORY (5). Pr., MN 346, junior standing. Organizations as socio-economic-political systems for collective action imbedded in a largely uncontrollable environment.
443. LABOR RELATIONS (5). Pr., junior standing. General survey of the development of collective bargaining, major provisions of labor law, and bargaining issues of craft and industrial unions.
470. HONORS READINGS (1-6). Pr., open only to persons in the University Honors Program and with consent of the student's Honors Advisor.
472. HONORS THESIS (1-6). Pr., open only to persons in the University Honors Program and with consent of the student's Honors Advisor.
474. QUALITY ASSURANCE (5). Pr., MN 301, 380, junior standing. Fundamental concepts in quality assurance; tools and techniques necessary to carry out quality control and improvement functions; use of control charts in statistical process control.

475. **MULTICRITERIA DECISION MAKING (3).** Pr., MN 380, 381. Quantitative methods and their application in production and distribution problems of business.
480. **STRATEGIC MANAGEMENT (5).** Pr., AC 211, 212, 241, FI 361, EC 202, 200 or 203, MN 310, MT 331, senior standing. Formulation and application of objectives, strategy, and policies pertaining to a total organization. Emphasis on problem-solving and the relationships between the functional areas of an organization.
483. **DATA BASE MANAGEMENT SYSTEMS (5).** Pr., an earned grade of C or better in both MN 308 and 401. Business applications software in a data base environment, complex data and file structures, systems design consideration of global and distributed data bases.
484. **OPERATIONS MANAGEMENT POLICIES (5).** Pr., FI 361, MN 380, 381, 386, MT 331. Capstone course for OM students. Application of material presented.
490. **SPECIAL PROBLEMS (1-10).** Pr., departmental approval, junior standing. May be repeated. Investigation and research into problems with special interest for the student. (S-U graded).
496. **READINGS IN MANAGEMENT (5).** Pr., MN 310, junior standing. Readings from prominent periodicals and journals in management theories, practices and functions.

ADVANCED UNDERGRADUATE AND GRADUATE

501. **LABOR RELATIONS LAW (5).** Pr., MN 443, junior standing. Analysis of background, content and significance of industrial relations law.
517. **LABOR RELATIONS IN PUBLIC ORGANIZATIONS (3).** Pr., junior standing. The background, legal and constitutional aspects and management of group negotiations and collective bargaining in public employment. (Same as PO 517.)
546. **HUMAN RESOURCE LEGISLATION (5).** Pr., MN 342, junior standing. Legal aspects of human resource management activities.
547. **EMPLOYEE COMPENSATION (5).** Pr., MN 342, junior standing. Factors, philosophy, design and problems of administration in compensation programs.
550. **HUMAN RESOURCE SELECTION AND PLACEMENT (5).** Pr., MN 301 or PG 304, MN 342, junior standing. Factors involved in developing an effective system for selecting, classifying and placing employees.
551. **HUMAN RESOURCE PLANNING, DEVELOPMENT AND APPRAISAL (5).** Pr., MN 342, junior standing. Theory, practice and design of managerial systems in these specialties.
552. **HUMAN RESOURCE AND ORGANIZATIONAL RESEARCH (5).** Pr., MN 301 or equivalent, 342 and junior standing. Application of research methods used in human resource management and organizational behavior through primary research projects involving data collection, analysis and writing of research results.
553. **LABOR NEGOTIATION AND ARBITRATION (5).** Pr., MN 443, junior standing. Bargaining issues, preparation for contract negotiation, interest and grievance arbitration of labor-management issues.
554. **INTERNATIONAL LABOR RELATIONS (3).** Pr., MN 443 or MN 410, junior standing. Variations among nations in the structure and government of trade unions, their political and religious ties, and other factors that influence multinational bargaining. Emphasis on industrialized nations.
560. **A SURVEY OF CURRENT TECHNOLOGIES IN MIS (5).** Pr., an earned grade of C or better in MN 314 or equivalent and MN 404, 480, 483 and junior standing. Recent developments in the technologies that impact the effective design, delivery and use of information systems in organizations.
565. **SEMINAR IN MIS (5).** Pr., an earned grade of C or better in MN 314 and 308. Specialized, in-depth study and research projects in selected topics in Management Information Systems.
588. **MIS PROJECTS (5).** Pr., an earned grade of C or better in MN 483. Synthesizes theory and principles of MIS using real-life, hands-on projects.

COURSES FOR GRADUATE STUDENTS

600. **COMPUTERS AND INFORMATION SYSTEMS IN MANAGEMENT (5).** Pr., consent of MBA Program director. In-depth analysis of computing, data processing, information systems in complex organizations.
601. **RESEARCH METHODS IN MANAGEMENT (5).** Pr., MN 804 or equivalent. Research methodologies commonly used in conducting research in the field of management. Research design and data collection techniques are emphasized.
602. **MANAGEMENT OF BUSINESS DATA COMMUNICATIONS AND NETWORKS (5).** Pr., MN 382 and CSE 100 or MN 314 or 600. Provides basic understanding of the principles of data communications and technologies. Provides the technical basis for making business telecommunications decisions.
603. **THE PROCESS OF MANAGEMENT (3).** Pr., for non-business students, consent of Director of the MBA program. Accelerated course in management concepts, production functions and practices.
604. **FOUNDATIONS OF STATISTICS (5).** Pr., MN 301 and, for non-business students, consent of Director of the MBA program. An accelerated course provides beginning MBA students with a foundation in statistical concepts, techniques and applications.
605. **BEHAVIORAL SCIENCE FOR THE CONTEMPORARY MANAGER (5).** Pr., MN 603 or equivalent, and, for non-business students, consent of Director of the MBA program. Advanced study of organization behavior and human relations in individual and group interactions within the environment of business organizations.
606. **STRATEGIC MANAGEMENT (5).** Pr., AC 610, FI 663, EC 656, MN 605, 681, MT 631, and, for non-business students, consent of Director of the MBA program. Basic administrative and managerial problems in business, industry and other organizations. Management of an organization from a general manager's perspective. Interrelations between environment, organization, strategy, policies and the execution of plans are emphasized.

608. ADVANCED HUMAN RESOURCE MANAGEMENT (5). Pr., MN 603 or equivalent. Advanced study of the role of personnel and human source management.
609. DATA PROCESSING AND INFORMATION SYSTEMS (3). Pr., for non-business students, consent of Director of the MBA program, College of Business. Accelerated course in computer programming, data processing and information systems.
610. MULTINATIONAL BUSINESS MANAGEMENT (5). Pr., completion of prerequisites for graduate study in Business. Management of the multinational enterprise which engages in direct foreign investment.
614. MANAGEMENT OF END USER COMPUTING (5). Pr., MN 600 and departmental approval. Advanced analysis, study and management of the phenomenon of computing being performed by personnel outside the Information Systems department in organizations, known as end user computing.
615. ORGANIZATIONAL BEHAVIOR AND CHANGE (5). Pr., MN 603 or equivalent and, for non-business students, consent of the MBA Program director. Advanced study of organizational behavior and human relations in individual and group interactions within the environment of business organizations. Addresses issues of conflict management, motivation and interpersonal communication from an organizational change perspective. Successful implementation of change, particularly technological change.
616. STRATEGIC MANAGEMENT OF INNOVATION AND TECHNOLOGY (5). Pr., AC 610, FI 663, EC 656, MN 605, 681, MT 631 and, for non-business students, consent of the MBA Program director. Basic administrative and managerial problems in business and organizations in high technology environments. Examines management of corporate innovation and technology commercialization processes, interrelations between environment, organization, strategy, policies and the execution of plans. Credit for MN 616 precludes credit for MN 606.
631. QUALITY CONTROL AND TOTAL QUALITY MANAGEMENT (5). Pr., MN 604, MN 474 or departmental approval. Quality management philosophies, statistical process control using control charts, process capability analysis, product/process design using experimental design principles.
633. WORK-SYSTEMS DESIGN (4). Pr., MN 385 or departmental approval. The integration of social, technical and economic aspects of job design.
637. PROJECT MANAGEMENT (5). Pr., MN 603 or equivalent. In-depth study of the planning, scheduling and controlling processes in contemporary industrial projects.
638. GLOBAL INFORMATION TECHNOLOGY MANAGEMENT (5). Pr., MN 600. Study of issues surrounding use of telecommunications and information systems by multinational corporations and governments globally.
640. ADVANCED ORGANIZATION THEORY (5) Pr., MN 603. Traditional and contemporary organization theories with emphasis on current research and controversy.
641. ADVANCED STUDY IN ORGANIZATIONAL BEHAVIOR (5). Pr., MN 346 or equivalent. Issues pertaining to the theory and process of organizational behavior. Individual and group levels of analysis are emphasized.
643. ADVANCED HUMAN RESOURCE LEGISLATION (5). Pr., MN 601, 608, or equivalent, or departmental approval. An analysis of regulatory guidelines, court cases and research issues associated with fair employment practice law.
644. COLLECTIVE BARGAINING AND ARBITRATION (5). Pr., MN 443 or departmental approval. Evolution and development of union-management relationships and the process of collective bargaining and arbitration.
645. LABOR LAW AND PUBLIC POLICY (5). Pr., MN 644 or departmental approval. Provides comprehensive understanding of current legal and policy issues in labor law, in-depth analysis of precedent setting legal cases.
646. SPECIAL TOPICS IN LABOR RELATIONS (5). Pr., MN 644 or departmental approval. In-depth analysis of trends of major importance in U.S. labor relations.
647. PRODUCTION/INVENTORY MANAGEMENT (4). Pr., MN 603, 604, 649 or equivalent. Control of manufacturing operations, forecasting, aggregate production and inventory planning, capacity planning and control, shop floor controls.
649. OPERATIONS AND QUALITY MANAGEMENT (5). Management of operation's function in manufacturing and service organizations including strategic issues, process management, manufacturing philosophies, scheduling, total quality management and quality management techniques.
650. SEMINAR (1-10). Pr., departmental approval. For students engaged in intensive study and analysis of management problems.
661. APPLIED REGRESSION ANALYSIS AND NONPARAMETRIC TECHNIQUES (5). Pr., AEC 659 or equivalent. Multiple regression analysis, residual analysis, search for an acceptable set of independent variables, model building, robust regression and nonparametric techniques, with applications to management problems.
666. INFORMATION SYSTEMS ANALYSIS AND DESIGN (5). Pr., MN 609 or equivalent. General systems theory, information system documentation, macro and micro information systems analysis, structured methodologies and prototyping.
670. PRODUCTION/OPERATIONS MANAGEMENT IN MANUFACTURING (4). Pr., MN 386 and MN 387 or MN 647 or departmental approval. Contemporary issues such as computer-aided manufacturing systems, just-in-time and the role of group technology.
672. OPERATIONS AND TECHNOLOGY POLICY (5). Pr., MN 649. Technology management policies and operations management policies that overlap. Capital investment decisions in process technology, high-tech vendor-customer relationships, cellular manufacturing, product and process development and teamwork.
673. A TECHNOLOGY MANAGEMENT PERSPECTIVE OF INNOVATIONS (5). Pr., MN 649. Assists students in understanding the emerging paradigms for managing product innovation and gives a set of basic tools to manage the process.

Marketing and Transportation

674. COMPENSATION THEORY (5). Pr., MN 601, 608, or departmental approval. In-depth study of compensation theories, design technology and research methodologies used in developing and analyzing compensation systems.
675. OPERATIONS MANAGEMENT IN SERVICE SYSTEMS (4). Pr., MN 631, 647, 681. The application of production and operations management techniques to problem solving in the service sector.
680. APPRAISAL AND DEVELOPMENT OF HUMAN RESOURCES (5). Pr., MN 551 or equivalent, 601, PG 627 or equivalent. Provides knowledge of empirical issues pertaining to the performance appraisal, development and internal staffing functions in organizations.
681. MANAGEMENT SCIENCE (5). Pr., for non-business students, consent of Director of MBA program. Deterministic and stochastic quantitative methods for business applications.
683. ADVANCED DATA BASE MANAGEMENT SYSTEMS (5). Pr., MN 600 or equivalent. Database management systems using database methodologies and technologies to support business applications, including complex data and file structures, systems design considerations and the requirements of distributed databases.
685. ADVANCED HUMAN RESOURCE SELECTION (5). Pr. MN 608 or equivalent. Provides understanding of legal and technical considerations in developing and administering personnel selection programs.
687. EXPERT SYSTEMS FOR BUSINESS (5). Pr., MN 583 or equivalent. In-depth study of the inference capability of information processing technologies in expert systems. Concepts of artificial intelligence will be reviewed and other topics will include decision support systems, database management systems and telecommunications design and management.
688. ADVANCED MANAGEMENT INFORMATION SYSTEMS AND DECISION SUPPORT SYSTEMS (5). Pr., MN 560, 583, 666 and 689. Problems of advanced analysis and design and implementation of MIS and DSS in organizations.
689. INFORMATION RESOURCE MANAGEMENT (5). Pr., MN 307, MN 609 or equivalent. Management of information systems resources, unique management problems in a computer information systems environment.
690. SPECIAL PROBLEMS (1-5). Pr., MN 603, 609, completion of 10 hours of 600-level MN courses and departmental approval. Variable content in the management area.
696. READINGS IN MANAGEMENT (5). Pr., MN 603. General management theories, practices and functions in industry and business. Also, covers the role of personnel management and human relations.
699. RESEARCH AND THESIS (CREDIT TO BE ARRANGED.)
701. MIS RESEARCH SEMINAR (5). Pr., MN 601 and departmental approval. Prepares doctoral students to conceptualize, conduct and present MIS research.
702. TELECOMMUNICATIONS MANAGEMENT (5). Pr., MN 602. Builds on MN 602 to enhance student's ability to understand and research telecommunications management issues.
750. ADVANCED RESEARCH IN MIS (5). Pr., MN 701. Winter. Theoretical foundations and research directions in organizational information processing, management information systems and management of technology.
766. AUTOMATED BUSINESS INFORMATION SYSTEMS (5). Pr., MN 583, 666, 683, 689 and departmental approval. Intensive treatment of automated business systems (ABIS), techniques and methodologies of systems planning, analysis and design, computer-aided software engineering (CASE) and the influences of information on ABIS.
- 791-792-793. MANAGEMENT PROBLEMS (1-5). Pr., approval of chairman of committee. Individual student endeavor under faculty supervision involving special problems or topics of an advanced graduate nature in management. Student must submit written proposal to department head. Maximum of 10 hours.
799. RESEARCH AND DISSERTATION (CREDIT TO BE ARRANGED.) Pr., departmental approval.

Marketing and Transportation (MT)

Professors Jahera, Head, Muse and Rotfeld

Associate Professors Abernethy, Adams, Butler, Guffey, Harris, LaTour,

Laumer, Min and Natarajan

Assistant Professor Lacher

Visiting Assistant Professors Kincaid and Magness

A 2.0 GPA is required for enrollment in any Business course at the 300-level and above. This rule applies to both Business and non-Business students.

MARKETING

331. PRINCIPLES OF MARKETING (5). Pr., junior standing and either EC 202 or for non-business majors, AEC 202 or EC 301. General survey of the marketing field covering channels, functions, methods and institutions.
332. MARKETING COMMUNICATION MANAGEMENT (5). Pr., MT 331, junior standing, not open to marketing majors. Credit cannot be received for both MT 332 and MT 432. An examination of the principles and applications of promotion in marketing.
333. MERCHANDISING MANAGEMENT (5). Pr., MT 331, junior standing, not open to marketing majors. Credit cannot be received for both MT 333 and MT 433. An examination and application of retail merchandising management concepts, principles and fundamentals.
341. BUYER BEHAVIOR (5). Pr., PG 201 or U 103, junior standing and an earned grade of C or better in MT 331. Analysis of the buying process as it is affected by environmental and institutional forces and development of market strategies which recognize these factors.

Marketing and Transportation

400. STUDENT INTERNSHIP PROGRAM (5). Pr., junior standing and selection by the committee directing the Marketing and Transportation Intern Program. Credit hours are not applicable as departmental electives. S-U credit. Summer. (May be repeated for a maximum of 10 hours credit).
432. PROMOTIONAL STRATEGY (5). Pr., junior standing an earned grade of C or better in MT 331 and 341. Problems of persuasive marketing strategy, promotional objectives, methods of implementing these objectives and the approaches by which the methods might be blended. Credit cannot be received for both MT 332 and MT 432.
433. RETAIL STORE MANAGEMENT (5). Pr., junior standing an earned grade of C or better in MT 331 and 341. Principles and practices in the scientific operation of the retail store. Store location, layout, buying, pricing, and merchandise control. Credit cannot be received for both MT 333 and MT 433.
434. PURCHASING (5). Pr., junior standing and an earned grade of C or better in MT 331 and MN 301. Objectives, control and the direction of industrial purchasing. Credit cannot be received for MT 434 and MN 420.
436. MARKETING RESEARCH METHODOLOGY (5). Pr., junior standing, MH 161 and an earned grade of C or better in MT 331, 341, MN 301 and MH 169. Methods of scientific research in the field of marketing and their application to the solution of marketing problems.
437. SALES MANAGEMENT (5). Pr., junior standing an earned grade of C or better in MT 331 and 341. Principles and practices of sound organization and administration of sales organization. Includes consideration of: sales department organization, selection, training, compensation, and supervising sales planning, setting up sales territories and quotas.
438. MARKETING CHANNEL SYSTEMS (5). Pr., junior standing an earned grade of C or better in MT 331 and 341. The nature and role of marketing channels. Major marketing strategy problems such as designing channel objectives and constraints, distinguishing major channel alternatives, and motivating, evaluating and controlling channel members.
439. FUNDAMENTALS OF SELLING (5). Pr., an earned grade of C or better in MT 331, 341 and junior standing. Knowledge of buyer behavior and skill requirements necessary for successful selling; the sales process; business and social responsibilities of salespersons. Credit cannot be received for both MT 332 and MT 432.
440. INTERNATIONAL MARKETING (5). Pr., junior standing an earned grade of C or better in MT 331 and 341. Adapting the marketing process of the domestic firm to international operations and the institutional structure that exists to service foreign markets and the practice of marketing administration by firms operating within these markets.
470. HONORS READINGS (1-6). Pr., open only to persons in the University Honors Program and with consent of the student's Honors Advisor.
472. HONORS THESIS (1-6). Pr., open only to persons in the University Honors Program and with consent of the student's Honors Advisor.
477. LOGISTICS SYSTEMS ANALYSIS (5). Pr., junior standing and an earned grade of C or better in MT 331 and 373. Problems and analysis in the design and management of logistics systems.
485. QUANTITATIVE ANALYSIS IN MARKETING (5). Pr., junior standing, MH 161 and an earned grade of C or better in MT 331, MN 301 and MH 169. Examination of the role of quantitative methods in implementing marketing strategy. Credit cannot be given for both MT 336 and 485.
490. SPECIAL PROBLEMS IN MARKETING (5). Pr., MT 331 and senior standing. Students conduct investigations of special problems in Marketing. S-U credit. (May be repeated for a maximum of 10 hours credit.)
498. MARKETING STRATEGY (5). Pr., an earned grade of C or better in MT 331, 341, 373, 436 and in 15 hours of marketing electives. An integrative capstone course for marketing majors with emphasis on strategic planning.

ADVANCED UNDERGRADUATE

581. SPECIAL STUDIES IN MARKETING RESEARCH (5). Pr., an earned grade of C or better in MT 436. Specialized in-depth study and research projects within a particular subject area.
582. SPECIAL STUDIES IN RETAILING/MERCHANDISING (5). Pr., an earned grade of C or better in MT 433. Specialized in-depth study and research projects within a particular subject area.
583. SPECIAL STUDIES IN PROMOTION (5). Pr., an earned grade of C or better in MT 432. Specialized in-depth study and research projects within a particular subject area.
584. SPECIAL STUDIES IN PRODUCT MANAGEMENT (5). Pr., an earned grade of C or better in MT 341. Specialized in-depth study and research projects in product management.
585. SPECIAL STUDIES IN INTERNATIONAL MARKETING (5). Pr., an earned grade of C or better in MT 440. Specialized in-depth study and research projects in international marketing.

COURSES FOR GRADUATE STUDENTS

605. SOCIAL AND LEGAL ENVIRONMENT OF BUSINESS (5). Pr., MT 630 or equivalent, and for non-business students, consent of the MBA program director. The influence of the social, legal, political and economic environment on business.
630. SURVEY OF MARKETING MANAGEMENT (3). Pr., EC 601 or equivalent, and for non-business students, consent of the MBA program director. An accelerated course in marketing concepts and practices.
631. MARKETING MANAGEMENT (5). Pr., MT 630 or equivalent, MN 604, AC 610. In-depth analysis of concepts and techniques pertinent to executive decision-making in marketing.
632. ADVERTISING AND PROMOTIONAL STRATEGY (5). Pr., MT 630 or equivalent. Managerial perspective of the marketing communications process.

Materials Engineering

636. **MARKETING RESEARCH: METHODOLOGY AND APPLICATIONS** (5). Pr., MN 604, MT 630 or equivalent. An examination of accepted marketing research techniques with emphasis on research design, implementation and data analysis from the point of view of marketing management.
637. **SALES MANAGEMENT** (5). Pr., MT 630 or equivalent. Overview of the many diverse facets of sales management, including sales forecasting, recruiting and selecting sales personnel, sales training, motivation and communications.
640. **INTERNATIONAL MARKETING AND DISTRIBUTION** (5). Pr., MT 630 or equivalent. A managerial perspective in international marketing and distribution operations.
641. **BUYER BEHAVIOR** (5). Pr., MT 630 or equivalent. An in-depth analysis of the major psychological, sociological and organizational behavior concepts involved in both consumer and industrial buyer behavior. Appropriate empirical findings are investigated in terms of their implications for marketing strategy.
671. **LOGISTICS MANAGEMENT** (5). Pr., EC 630 or equivalent. Analysis of major logistics elements within the total system of the firm. A problem oriented approach is employed in developing a managerial perspective.
672. **TRANSPORT ECONOMICS AND PUBLIC POLICY** (5). Pr., MT 630 or equivalent. An examination of the U.S. transport system and an analysis of public policy issues regarding regulatory objectives and efficiency of resources used in transportation.
674. **MARKETING MANAGEMENT PERSPECTIVE OF INNOVATIONS** (5). Pr., MT 630. Examines the role of marketing in the process of developing innovative products and services.
690. **SPECIAL PROBLEMS** (5). Variable content in the marketing or transportation areas.
699. **RESEARCH AND THESIS (CREDIT TO BE ARRANGED)**

TRANSPORTATION AND PHYSICAL DISTRIBUTION

372. **PRINCIPLES OF TRANSPORTATION** (5). Pr., EC 202 and junior standing. The development of systems of transportation. Analysis of rates and their effects upon commerce and industry. Government regulation of transportation agencies.
373. **INTRODUCTION TO BUSINESS LOGISTICS** (5). Pr., MT 331 and junior standing. Fundamentals of physical distribution activities and their interrelationships in the management of the distribution process.
474. **INDUSTRIAL TRAFFIC MANAGEMENT** (5). Pr., MT 372 and junior standing or departmental approval. Problems and policies involved in the traffic management function of the industrial firm.
475. **TRANSPORTATION AND PUBLIC POLICY ISSUES** (5). Pr., MT 372 and junior standing or departmental approval. Economic, legislative, and administrative problems related to public policy issues facing the transportation industry.
476. **CARRIER MANAGEMENT POLICY AND PRACTICE** (5). Pr., MT 372, 475, or departmental approval and junior standing. Problems and policies in the management and administration of transport enterprises of different modal types, primarily air, rail and motor.

ADVANCED UNDERGRADUATE

588. **SPECIAL STUDIES IN TRANSPORTATION/LOGISTICS** (5). Pr., MT 372, and two from 373, 475, 476 and 477. Specialized in depth study and research projects within a particular subject area.

Materials Engineering (MTL)

Professors Chin, *Chairman*, Jang, Wilcox and Zee
Assistant Professor Gale, Fergus and Yang

Responsibility for this curriculum rests with the Materials Engineering Curriculum Committee. Questions should be directed to the Department of Mechanical Engineering, which administers the program. General Curriculum, CLA, students (those with undeclared majors) may enroll only with departmental consent.

210. **STRUCTURE OF MATERIALS** (3). Pr., CH 103, PS 220 or 205. Theories and structures of crystalline and amorphous materials. Bonding, crystal classes, defects and atomic movement. (Mainly for Materials majors.)
220. **MATERIALS AND PROPERTIES I** (3). Pr., CH 103, PS 220. Principles of materials selection, methods of mechanical testing, effects of environment, deformation and annealing, failure and non-destructive testing as related to the properties of materials.
320. **MATERIALS AND PROPERTIES II** (4). LEC. 3, LAB. 3. Pr., MTL 220. Relationship between structure and properties of materials; solidification, mechanisms of alloy strengthening, phase transformations, heat treatments and material systems.
336. **PHYSICAL ANALYSIS OF MATERIALS** (4). LEC. 3, LAB. 3. Coreq., MTL 320. The analysis and interpretation of the structures of materials using optical techniques. Specific physical properties will be measured. Samples will be prepared and processed by the students.
338. **PHASE DIAGRAMS** (3). Coreq., MTL 320. Methods of representing and interpreting phase equilibria. Binary and multicomponent systems. Simpler temperature-composition systems and more complex temperature-pressure-composition systems. Major emphasis on applications. Minor emphasis on phase diagram determination and thermodynamics.
420. **STRUCTURE AND PROPERTIES LABORATORY** (3). LEC. 1, LAB. 6. Pr., MTL 320. Coreq., MTL 447. Emphasizes the use of processing and thermo-mechanical treatments to control the microstructure of a material. Tests are then conducted on both polymer and metallic materials to investigate the relationship between the microstructure and mechanical properties.

435. PHYSICAL ANALYSIS OF MATERIALS III (4). LEC. 3, LAB. 3. Pr., MTL 320. The evaluation of microscopic structural features, anisotropic materials properties and the detection and interpretation of flaws. Microscopy, radiography and other non-destructive test methods will be employed.
436. ENGINEERING MATERIALS SCIENCE—FERROUS METALLURGY (3). Pr., MTL 336. Design of ferrous metals following modern theory and practice. Hardenability, alloying deformation, and special purpose steels.
445. TRANSFORMATIONS IN CONDENSED PHASES (4). LEC. 3, LAB. 3. Pr., MTL 320, MTL 550, and MTL 436. Important transformations in both metallic and non-metallic materials with crystalline or glass structures. Structures, mechanisms, distinctive characteristics and applications will be studied. Selected transformations will be studied in the laboratory.
446. THEORETICAL MATERIALS ENGINEERING (3). Pr., MTL 575. Coreq. MTL 570, 513. The physical properties of materials in relation to modern theories.
447. MECHANICS OF ENGINEERING MATERIALS (3). Pr., EGR 207. Mechanical properties in relation to structural features of alloys, plastics, ceramic materials and composites under static, dynamic and cyclic service and test conditions. Conditions for the attainment of optimum properties and behavior will be emphasized.
448. INTRODUCTION TO CERAMICS (3). Pr., MTL 210, 320. The engineering applications and design principles of important ceramic materials will be studied with particular attention directed to the structure-property relationships. Both glassy and crystalline ceramic materials will be included.
479. HONORS THESIS (1-6). Pr., departmental approval and department head approval. Individual student directed research and writing of honors thesis. (MTL Honors Program students only. May be repeated once for a maximum of six total credit hours.)
491. DIRECTED READING IN MATERIALS ENGINEERING (VARIABLE CREDIT). Pr., senior standing. Areas of current interest within materials engineering. Maximum credit of 5 hours per quarter and cannot be taken more than two quarters for a maximum of six total credits.
498. ADVANCED PROJECTS I (2). Pr., senior standing. Selection and the development of a plan for a design project to be completed in Advanced Projects II. Issues relating to the management of a project and the writing of reports will be discussed.
499. ADVANCED PROJECTS II (4). LEC. 1, LAB. 9. Pr., MTL 498. Completion of projects culminating in a formal presentation and written report.

ADVANCED UNDERGRADUATE AND GRADUATE

501. MATERIALS ENGINEERING PHYSICS FOR TEACHERS (3). Pr., PS 207 or CH 207. Materials engineering and technological systems of the future and the relationship of technology development with physical concepts. For prospective and practicing secondary and/or middle school teachers with emphasis on science and educational methods. Cannot be used as technical elective or graduate credit for students in science, mathematics or engineering.
513. INTRODUCTION TO X-RAY CRYSTALLOGRAPHY (3). Pr., MTL 320. Principles of crystallography, the reciprocal lattice, theory of x-ray diffraction and the powder, Laue and diffractometer.
514. X-RAY AND NDT LABORATORY (3). LEC. 1, LAB. 6. Pr., departmental approval or MTL 513. The analysis and interpretation of the structures and properties of materials using special techniques. Emphasis will be placed on x-ray diffraction and other non-destructive techniques.
515. POLYMER TECHNOLOGY I (3). Pr., MTL 320. Important aspects of polymer science, connection between chemical structure and important properties of modern plastics and synthetic structural materials; the common methods of fabrication of these into articles and the basic chemistry behind their manufacture.
516. POLYMER TECHNOLOGY II (3). Pr., MTL 515 or TE 424. Continuation of MTL 515. Polymerization and condensation polymers. Modes of fabrication, special use selection requirements and number of commercially available materials and their areas of use.
537. MANUFACTURING PROCESSES AND MATERIALS (3). Pr., junior standing, MTL 320 and departmental approval. Principles and engineering problems involved in the fabrication of materials.
550. THERMODYNAMICS OF MATERIALS SYSTEMS (3). Pr., EGR 201 and MTL 338. The laws of thermodynamics applied to the stability of material phases, crystal imperfections, solubility, oxidation, surface and interface energy, and transformations.
570. ELECTRICAL PROPERTIES OF MATERIALS (3). Pr., EE 302. The electrical properties of materials with emphasis on semiconductors.
575. RATE PROCESSES IN MATERIALS (3). Pr., MTL 550, or departmental approval and junior standing. Diffusion in the gas, liquid and solid phases and the fundamentals of chemical reaction kinetics pertinent to the crystallization and transformation of materials.

COURSES FOR GRADUATE STUDENTS

610. ADVANCED MATERIALS THERMODYNAMICS (3). Pr., MTL 550 or equivalent. Application of the Laws of Thermodynamics to Material Systems: chemical reactions, phase equilibria and transformations, oxidation, theoretical phase diagram generation and non-ideal solution theory.
615. KINETICS OF MATERIALS (3). Pr., MTL 575 or equivalent. Activated rate theory, solid-state diffusion, atomic theory of diffusion, Kirkendall effect, Darken equations, high diffusivity phenomenon and chemical reaction kinetics pertinent to transformations.
630. ELECTRON MICROSCOPY I - SEM AND EDS (3). Pr., graduate standing. Theory and techniques of instrumentation and practices of scanning electron microscopy, X-ray microscopy and X-ray microanalysis as used by the material scientist.

631. SEM AND FAILURE ANALYSIS LABORATORY (3). LEC. 1, LAB. 6. Pr., MTL 630. Techniques of instrumentation involving scanning electron microscopy and x-ray microanalysis and the use of these instruments for the description and identification of fracture in engineering systems. Can only be taken while in residency.
632. ELECTRON MICROSCOPY II - TEM (3). Pr., graduate standing. Theory and techniques of instrumentation and practical applications of transmission electron microscopy.
634. DIFFRACTION AND CRYSTALLOGRAPHY (3). Theory of diffraction, crystal structure, reciprocal space and Ewald construction.
636. QUANTITATIVE MICROSTRUCTURAL ANALYSIS (3). Principles of the measurement of features in materials microstructure based on planar sections. Specific applications of the measurement of average dimensions and proportions of areas and volumes. The statistical basis is emphasized.
637. TOPICS IN X-RAY DIFFRACTION (3). Pr., MTL 513. Topics in x-ray diffraction, such as temperature vibrational effects, order-disorder, crystal imperfections, small angle scattering, amorphous materials and nearly perfect crystals.
639. TEM AND X-RAY LABORATORY (3). LEC. 1, LAB. 6. Pr., MTL 632, 634. Techniques of instrumentation and practices of transmission electron microscopy and x-ray diffraction analysis. Can only be taken while in residency.
655. ADVANCED STRUCTURAL CERAMICS (3). Pr., MTL 448. Familiarize graduate students with processing, properties and structure of advanced structural ceramics. Novel ceramic processing techniques like sol-gel and chemical vapor infiltration are discussed.
659. SOLID STATE ELECTROCHEMISTRY AND SENSOR MATERIALS (3). Pr., MTL 610 or departmental approval. Defect chemistry/transport properties of ionic crystals. Application of solid electrolytes in chemical sensor, batteries and fuel cells.
660. STRUCTURE AND PROPERTIES OF SOLIDS (3). Pr., departmental approval. Denominations of structure are considered, via an interdisciplinary approach, from the viewpoint of providing a fundamental insight with respect to the genesis of selected macroscopic properties.
661. CORROSION: FUNDAMENTALS AND APPLICATIONS (3). Pr., departmental approval. Nature and mechanisms of corrosion. Effects of: material manufacturing methods, construction and environment. Corrosion types and methods of corrosion control.
662. PERFORMANCE OF METALS AT ELEVATED TEMPERATURE (3). Pr., departmental approval. Fundamental behavior of metals at elevated temperatures. Commercial and experimental types of ferrous and nonferrous alloys and their suitability for elevated temperature applications.
663. SOLIDIFICATION PROCESSING (3). Theoretical presentation of the principles that apply to crystal growth, ingot casting and welding. The basis for the control of nucleation, growth, microstructure and morphology is studied. Special consideration is given to the effects of heat flow, fluid flow and composition.
665. STRENGTHENING OF METALS (3). Pr., MTL 320 or equivalent. Treatment of the six basic mechanisms by which metals are strengthened. Emphasis is on causative factors and accompanying manifestations.
666. PLASTICITY OF METALS (3). Pr., MTL 320 or equivalent. A quantitative treatment of the minimization of plastic flow, by means of design considerations, where the phenomenon is associated with deleterious effects, the maximization of plastic flow by means of material conditions and forming method considerations, where the objective is to form or shape.
667. DISLOCATION THEORY (3). Pr., departmental approval. Nature and properties of dislocations including crystal structure and imperfections, dislocation geometry in both ideal and real crystals, dislocation configurations, multiplication and interactions with various imperfections and methods of observation.
669. ADVANCED POLYMER SCIENCE AND TECHNOLOGY (3). Pr., departmental approval. A course designed to discuss the state-of-the-art of polymer science and engineering emphasizing the elucidation of polymer structure, developments of new materials and of new fabrication methods and recent studies on structure-property-processing interrelationships.
670. STRUCTURE AND PROPERTIES OF COMPOSITE MATERIALS (4). Pr., departmental approval. To familiarize graduate students with the sciences, engineering and design of composite materials, emphasizing the resin development, fiber technology, fiber-matrix interface, principles of reinforcement, fabrication technology and application of polymer-based composites.
671. WELDING METALLURGY (3). Pr., departmental approval. Classification of welding processes and study of weldability with an emphasis on material characteristics. Welding of aluminum base alloys, stainless steels and alloy steels is studied in relation to phase diagrams, thermal distribution, welding variables, residual stress, defects, testing and structure-property relations.
672. MATERIALS FAILURE ANALYSIS (3). Pr., departmental approval. Description of techniques and methodology used in describing and identifying sources of failures in engineering systems, fractography.
673. INTRODUCTION TO THIN FILM TECHNOLOGY (3). Pr., departmental approval. Deposition processes, physics of thin films; thin film characterization; application of thin films; electrical, magnetic, optical and structural properties of thin films.
674. ADVANCED ELECTRICAL OPTICAL AND MAGNETIC PROPERTIES OF MATERIALS (3). Pr., MTL 660 or PS 516 or departmental approval. The electrical, optical and magnetic properties of various materials and structures will be discussed along with technological applications.
675. OPTICAL PROPERTIES OF ADVANCED MATERIALS (3). Pr., MTL 674 or PS 604 or departmental approval. Optical properties of various technologically important materials and structures will be discussed.
685. SEMINAR IN MATERIALS ENGINEERING (1). Required during each quarter of residency but cannot be used toward minimum requirements for graduate degree in Materials. The content will change for each quarter and will consist of off-campus speakers and presentations by graduate students and faculty. S-U grading only.

690. SPECIAL TOPICS IN MATERIALS SCIENCE (4). Pr., departmental approval but not available to off-campus outreach students. Course taught by faculty from the University of Alabama System via interactive television. (A) Thermodynamics of Materials, (B) Kinetics, (C) Materials Characterization I, (D) Materials Characterization II.
691. DIRECTED READING IN MATERIALS ENGINEERING (CREDIT TO BE ARRANGED.) May be taken more than one quarter.
695. MASTER OF MATERIALS ENGINEERING PROJECT (3). Pr., enrollment in M.Mt.E. Program. Special design project report directed by major faculty advisor. Topic to be determined by the student's graduate committee. Required by all M.Mt.E. students and can be taken any time after two quarters of study. Can be taken only once and may not count in the minimum 45 hours.
699. RESEARCH AND THESIS (CREDIT TO BE ARRANGED.) May be taken more than one quarter.
740. ADVANCED COMPOSITE MATERIALS (3). Pr., MTL 670 or departmental approval. Emphasizes the science of design, manufacture, evaluation, durability and quality assurance of fiber composites. New composite theories and technology developments will be discussed.
750. RADIATION EFFECTS IN MATERIALS (3). Pr., graduate standing. Theoretical treatments of radiation effects and damage in materials, especially related to the nuclear industry.
799. RESEARCH AND DISSERTATION (CREDIT TO BE ARRANGED.) May be taken more than one quarter.

Mathematics (MH)

Professors Kozlowski, *Head*, Albrecht, DeSouza, Govil, Gruenhage, Heath, Hetzer, Hill, J. Holmes, Kallenberg, Kilgore, W. Kuperberg, Minc, Pate, J. Rogers, Sampson, Smith, Szulga, Uhlig, Zalik and Zenor

Alumni Professors J. Brown and K. Kuperberg

Associate Professors Baldwin, Bazdek, Goeters, Han, Hinrichsen, R. Holmes, Liao, Meir, Nylen, Schmidt, Slaminka, Tam, Transue, Ullery and Young

Assistant Professors Koszmider, Shen and Stuckwisch

Instructors S.J. Brown and J.S. Rogers

(*) Denotes the course is not available to majors or graduate students in the area of science or mathematics.

(**) Denotes this is a non-credit course for students in some scientific and technical curricula.

100. MATHEMATICAL INSIGHTS (5). For students in the arts or humanities. Gives students insight into the nature of mathematics by engaging them in mathematical thought processes within a suitable elementary framework. Prior credit for any other University mathematics course precludes credit for this course.
140. COLLEGE ALGEBRA (5). Pr., high school geometry, second year high school algebra or departmental approval.** Algebraic techniques, coordinate geometry, functions and relations and their graphs and common logarithms. A preparatory course for MH 160 and 161. Credit is not allowed for both MH 140 and 160.
155. ANALYTIC GEOMETRY (5). Pr., MH 160 or equivalent. Plane and solid analytic geometry. Lines, planes, circles, spheres, vectors, conics, change of coordinates, polar coordinates, parametric equations, curve sketching.
159. INTRODUCTION TO MATHEMATICS (5). Pr., high school geometry, second-year high school algebra or departmental approval. Equations and inequalities, functions and graphs, exponential and logarithmic functions, the mathematics of finance, introduction to probability and related applications. Credit is not allowed for both MH 160 and 159, but MH 159 does not satisfy the prerequisite requirements for MH 161.
160. PRE-CALCULUS WITH TRIGONOMETRY (5). Pr., high school geometry, second year high school algebra or departmental approval.** The basic analytic and geometric properties of the algebraic and trigonometric functions with heavy emphasis on the latter. A preparatory course for the calculus sequence. Students who need a review of algebraic techniques should take MH 140. Credit is not allowed for both MH 140 and 160.
161. ANALYTIC GEOMETRY AND CALCULUS (5). Pr., MH 160. Limits, the derivative, applications of the derivative, antiderivatives; the definite integral; the fundamental theorem of calculus. Credit is not allowed for MH 161 and 191.
162. ANALYTIC GEOMETRY AND CALCULUS (5). Pr., MH 160 and 161. Integrals, applications of the integral, the calculus of the exponential and logarithmic functions. The calculus of the trigonometric and inverse trigonometric functions, the conic sections. Credit is not allowed for both MH 162 and 192.
163. ANALYTIC GEOMETRY AND CALCULUS (5). Pr., MH 162. Special techniques of integration, improper integrals, infinite sequences and series, vectors. Credit is not allowed for both MH 163 and 193.
169. BUSINESS MATHEMATICS WITH CALCULUS APPLICATIONS (5). Pr., MH 161. Selections from calculus, elementary combinatorial analysis, probability theory, linear algebra, linear programming with emphasis on business applications. For students in the College of Business and not open, except by special permission of the Department of Mathematics, to students in engineering or the mathematics or physics majors.
171. HONORS CALCULUS I (5). Pr., MH 160. Limits, the derivative, applications of the derivative, antiderivatives; the definite integral; the fundamental theorem of calculus. Credit is not allowed for both MH 171 and 161 or 191.
172. HONORS CALCULUS II (5). Pr., MH 171. Integrals, applications of the integral, the calculus of the exponential and logarithmic functions, the calculus of the trigonometric and inverse trigonometric functions, the conic sections. Credit is not allowed for both MH 172 and 162 or 192.
173. HONORS CALCULUS III (5). Pr., MH 172. Special techniques of integration, improper integrals, infinite sequences and series, vectors. Credit is not allowed for both MH 173 and 163 or 193.

- 191-192-193. CALCULUS FOR ENGINEERING AND SCIENCE (5-5-5). Pr., MH 160. Plane and solid analytic geometry, real and vector valued functions, limits, derivatives and antiderivatives of algebraic and trigonometric functions. Integrals, the Fundamental Theorem of Calculus, line integrals, potential functions, force fields, and surface integrals. Methods of integration, in determinate forms, improper integrals. Credit is not allowed for both MH 161-162-163 and 191-192-193.
264. ANALYTIC GEOMETRY AND CALCULUS (5). Pr., MH 163. Multivariate calculus: vector valued functions, partial derivatives, multiple integration, vector calculus. Credit is not allowed for both MH 264 and 294.
265. LINEAR DIFFERENTIAL EQUATIONS (3). Coreq., MH 264. First and second-order linear differential equations including the solution of such equations by infinite series.
266. TOPICS IN LINEAR ALGEBRA (3). Pr., MH 163. Linear spaces, vector spaces, linear transformations, matrices and determinants. Not open to students who have credit for MH 337, 531 or 505 or 537.
267. DISCRETE PROBABILITY (5). Coreq., MH 161. For students whose fields require a basic knowledge of probability and for those who plan to take upper level courses in probability and statistics. Conditional probability, independence and random variables with emphasis on discrete random variables.
269. ELEMENTARY DIFFERENTIAL EQUATIONS (5). Pr., MH 264. Ordinary differential equations with applications. Credit for this course precludes credit for MH 265.
271. INTRODUCTION TO MATHEMATICAL PROGRAMMING (3). Coreq., MH 264. Introduction to the organization and characteristics of the digital computer, and to programming in FORTRAN, with applications to problems in algebra and the calculus.
272. MATHEMATICAL PROGRAMMING AND NUMERICAL ALGORITHMS (3). Coreq., MH 265 and 266. Pr., MH 271. Introduction to numerical methods for solution of ordinary differential equations and systems of linear equations. Further programming practice in FORTRAN.
274. HONORS CALCULUS IV (5). Pr., MH 173. Multivariate calculus: vector valued functions, partial derivatives, multiple integration, vector calculus. Credit is not allowed for both MH 274 and 264 or 294.
285. MATHEMATICS FOR ELEMENTARY EDUCATION (5). Pr., MH 160 or higher. Appropriate mathematical insights for elementary school teachers. Emphasis on the structure of the number systems and informal geometry. Open for credit only to students in elementary education, except by special permission of the Department of Mathematics.
294. CALCULUS FOR ENGINEERING AND SCIENCE (5). Pr., MH 193. A continuation of MH 191-192-193. Sequences, infinite series introduction to complex variables. Credit is not allowed for both MH 264 and 294.
301. HISTORY OF MATHEMATICS (3). Pr., MH 163 or departmental approval. The evolution of modern mathematics from its motivational roots in the physical sciences; the lives and contributions of outstanding mathematicians; the parallel development of mathematics and western culture.
- 331-332. INTRODUCTION TO MODERN ALGEBRA I, II (5-5). Pr., MH 163. Sets, mappings, the integers, isomorphisms, and homomorphisms; groups, rings, fields, ideals. Credit is not allowed for both sequences MH 331-332 and 333-334.
333. ELEMENTARY GROUP THEORY (3). Pr., MH 337. Groups, subgroups, normal subgroups, factor groups, homomorphisms, direct products, Sylow theories.
334. ELEMENTARY RING THEORY (3). Pr., MH 333. Rings, ideals, polynomial rings, prime ideals, maximal ideals, fields of quotients. Credit is not allowed for both sequences MH 331-332 and 333-334.
337. INTRODUCTION TO LINEAR ALGEBRA (5). Pr., MH 163. Matrices; systems of equations; determinants; vector spaces; linear transformations; inner products; unitary, Hermitian and normal matrices; eigenvalues and eigenvectors; diagonalization of Hermitian matrices. Credit for this course precludes credit for MH 266.
362. ENGINEERING MATHEMATICS I (3). Pr., MH 265. Fourier Series, partial differential equations, special functions.
399. EXPERIENTIAL LEARNING IN MATHEMATICS (2). Pr., MH 163. Not for credit toward major or minor in mathematics. General elective credit only. Maximum number of credit hours is six.
479. HONORS THESIS (3-6). Pr., senior status and enrollment in Auburn University Honors Program. May be repeated once for maximum of six hours credit.
491. SPECIAL PROBLEMS (1-5). Pr., departmental approval, junior standing. An individual problems course. Each student will work under the direction of a staff member on some problem of mutual interest.
500. MATHEMATICAL MODELING - CONTINUOUS (5). Pr., MH 265, 269, or 528; an ability to program in FORTRAN. Introduction to mathematical models and related techniques. Course includes general principles involving continuous deterministic problems and a detailed, specific term-project.
501. THE CALCULUS OF VECTOR FUNCTIONS (3). Pr., MH 266 or departmental approval. Derivative and integral of vector functions, gradient, divergence, curl, Green's Theorem, Stoke's Theorem.
502. TENSOR ANALYSIS (3). Pr., MH 264 and 501. The Frechet derivative; tensors and tensor valued functions; coordinate transformations; contravariant tensors; tangent spaces; differential forms; wedge products of forms; Einstein summation convention (raising and lowering indices); Riemannian metrics.
503. COMPLEX VARIABLES WITH APPLICATIONS I (5). Pr., MH 265 or 269. Complex functions and their elementary mapping properties; Cauchy-Goursat theorem; contour integration and residues; Laurent series; applications to real integrals. The sequence MH 503-504 is appropriate for students of engineering or science.
504. COMPLEX VARIABLES WITH APPLICATIONS II (3). Pr., MH 503. Linear fractional transformations; conformal mappings; harmonic functions; applications to boundary value problems; analytic continuation; entire functions. The sequence MH 503-504 is appropriate for students of engineering or science.
505. MATRIX THEORY AND APPLICATIONS (5). Pr., MH 266 or 531. Canonical forms, determinants, linear equations, characteristic value problems.

506. ELEMENTARY PARTIAL DIFFERENTIAL EQUATIONS (3). Pr., MH 362. First and second order linear partial differential equations with emphasis on the method of eigenfunction expansions.
508. ELEMENTS OF NUMERICAL ANALYSIS (5). Pr., MH 264. The numerical solutions of selected problems arising in calculus and algebra along with the programming techniques.
- 513-514. CALCULUS OF VARIATIONS I, II (3-3). Pr., MH 265 or 269. Fundamental concepts of extrema of functions and functionals; the simplest problem of the calculus of variations; first and second variations; generalizations of the simplest problem; sufficient conditions; constrained functionals; the general Lagrange problem; optimal control.
- 516-517. INTRODUCTION TO APPLIED MATHEMATICS I, II (3-3). Pr., MH 265, 266 or equivalent. Special functions, orthogonal polynomials, integral equations, boundary value problems, Sturm-Liouville theory, systems of ordinary differential equations and elements of linear control theory, Lie groups, singular perturbations, boundary layers, Zeeman and Stark effects, classification of catastrophe sets, bifurcation of equilibrium states in one dimension, Hopf bifurcation, nonlinear oscillations.
- 518-519. INTRODUCTION TO APPROXIMATION THEORY I, II (4-4). Pr., MH 265 or departmental approval. The approximation of functions by polynomials, spline functions or trigonometric function, using techniques of interpolation or expansion in series. The sequence MH 518-519 is appropriate for students of engineering and science.
- 520-521-522. ANALYSIS I, II, III (5-5-5). Pr., MH 264. The real number system, theorems concerning number sets, sequences, graphs of functions; Riemann-Stieltjes integration, continuity, the derivative and functions of bounded variation; functions whose domains are in Euclidean spaces.
524. FOURIER ANALYSIS (5). Pr., MH 521. Convergence and oscillation theorems for Fourier Series. Gibbs phenomenon. Fourier transform. Fast Fourier transform.
528. SYSTEMS OF DIFFERENTIAL EQUATIONS AND APPLICATIONS (5). Pr., MH 265 and 266 or equivalent. Linear systems of differential equations, stability, phase portraits; non-linear systems, linearization, qualitative properties of orbits, Poincaré-Bendixson Theorem; numerical methods; applications to various disciplines.
531. INTRODUCTION TO MODERN ALGEBRA III (5). Pr., MH 332. A continuation of MH 331-332.
533. RING AND FIELD THEORY (3). Pr., MH 334. A continuation of MH 334. Unique factorization domains, fields and field extensions, algebraic and transcendental extensions, algebraic closures, algebras.
534. GALOIS THEORY (3). Pr., MH 533. Solvable groups, automorphism groups, radical extension, normal extensions, separable extensions.
537. LINEAR ALGEBRA (5). Pr., MH 266 and 332. Linear transformations, matrix algebra, finite-dimensional vector spaces.
- 538-539-540. INTERMEDIATE EUCLIDEAN GEOMETRY I-II-III (5-5-5). Pr., MH 163. An outline of the fundamental concepts and theorems of plane and solid Euclidean geometry with an introduction to higher dimensions. Regular polygons and polyhedra, symmetry groups, convexity, geometric extremum problems. Geometric transformations and their invariants.
- 541-542. GEOMETRY, A MODERN VIEW I, II (5-5). Pr., MH 163. A development of geometry using the real number system and measurement as proposed by G. D. Birkhoff. The course moves rapidly, with definitions and proofs, through the foundations of geometry and into the main body of geometric theory.
543. LINEAR GEOMETRY (5). Pr., MH 163. Transformations in projective, affine, and Euclidean planes.
544. COMBINATORIAL GEOMETRY IN THE PLANE (5). Pr., MH 163. Helly's and related theorems.
547. ONE-DIMENSIONAL DYNAMICAL SYSTEMS (3). Pr., MH 265 or departmental approval. Introduction to dynamical systems with emphasis on applications. Study of the logistic equation will motivate this course which will include: bifurcation theory, chaos, hyperbolicity, symbolic dynamics, Sarkovskii's theorem, maps of the circle, homoclinic points and the theory of kneading sequences.
548. MULTI-DIMENSIONAL DYNAMICAL SYSTEMS (3). Pr., MH 547 or departmental approval. Extends the results of MH 547 to multi-dimensional systems and will describe in addition, the new phenomena that occur. Topics to be considered will be: the Lorenz map, strange attractors, the horseshoe map, local automorphisms, stable and unstable manifolds, periodic points and the Henon map.
549. COMPLEX ANALYTIC DYNAMICAL SYSTEMS (3). Pr., MH 548 or departmental approval. Focuses on the dynamics of analytic mappings of the complex plane. Topics to be considered will be: quadratic maps, Julia sets, normal families and exceptional points, periodic sets and the exponential map.
550. INTRODUCTION TO TOPOLOGY (5). Pr., MH 520 or departmental approval. Metric spaces, topological spaces, continuity, compactness, connectedness, product and quotient spaces and local properties.
555. INTRODUCTION TO RECURSION THEORY (5). Pr., DMS 371 or departmental approval. Partial recursive functions, recursive and recursively enumerable sets. Church's Thesis. Acceptable enumerations, Kleene's T-predicate, and the recursion theorem. The halting problem, the jump operation, and Turing degrees. Other recursively unsolvable problems.
563. INTRODUCTION TO NUMERICAL ANALYSIS I (5). Pr., MH 265 or 269 and an ability to program in a high level language. Numerical solution of equations in one variable, polynomial approximation, numerical differentiation and integration, numerical solutions of ordinary differential equations, error analysis. Students will be expected to write computer programs using the algorithms discussed.
564. INTRODUCTION TO NUMERICAL ANALYSIS II (5). Pr., MH 266 or 337 and an ability to program in a high level language. Direct and iterative numerical solutions of systems of linear equations, numerical computation of eigenvalues and eigenvectors, error analysis. Students will be expected to write computer programs using the algorithms discussed.

565. THEORY OF NONLINEAR OPTIMIZATION (5). Pr., MH 264 and 266, or equivalent. Kuhn-Tucker conditions, quadratic programming, search methods and gradient methods, Lagrangean and penalty function methods.
566. INTRODUCTION TO NUMERICAL ANALYSIS III (5). Pr., MH 563 and 564 or departmental approval. Approximation theory, numerical solution of systems of non-linear equations, singular value decomposition and least-square problems, direct and indirect methods for sparse matrices.
567. PROBABILITY THEORY (3). Pr., MH 264. An introduction to probability. Random variables, discrete and absolutely continuous distributions. The Poisson process. Expectation and conditional expectation. Moments and moment generating functions. Convergence and limiting distributions. Problem solving.
- 568-569. MATHEMATICAL STATISTICS I-II (3-3). Pr., MH 567. Introduction to the mathematical theory of statistics. Estimation and maximum likelihood estimates. Sampling distributions, confidence intervals, hypothesis testing, the likelihood ratio test, sufficiency, completeness and Rao-Blackwell theorem. Analysis of variance, regression and least squares. Sequential analysis. Bayesian estimation. Nonparametric methods.
581. FOUNDATIONS OF GROUP THEORY FOR SECONDARY SCHOOL TEACHERS* (4). Pr., one course above MH 163. Elements of the theory of groups emphasizing geometric and other examples.
583. FOUNDATIONS OF LINEAR ALGEBRA FOR SECONDARY SCHOOL TEACHERS* (4). Pr., one course above MH 163. Matrix algebra, quadratic forms. Emphasis on geometric interpretations in two and three dimensions.
584. FOUNDATIONS OF NUMBER THEORY FOR SECONDARY SCHOOL TEACHERS* (4). Pr., one course above MH 163. Divisibility, Diophantine equations, congruencies.
585. FUNDAMENTALS OF ALGEBRA FOR SECONDARY SCHOOL TEACHERS* (4). Pr., one course above MH 163. Structure of the ring of integers; polynomial rings.
586. FOUNDATIONS OF NON-EUCLIDEAN GEOMETRY FOR SECONDARY SCHOOL TEACHERS* (4). Pr., one course above MH 163. B.L. geometry, hyperbolic geometry, absolute geometry, parallel postulates.
587. FUNDAMENTALS OF ANALYSIS FOR SECONDARY SCHOOL TEACHERS* (4). Pr., one course above MH 163. Mathematical analysis with emphasis on basic principles and relationships. Students will develop the material from basic concepts.
- 588-589. CERTIFICATION MATHEMATICS FOR SECONDARY SCHOOL TEACHERS* (5-5). Pr., undergraduate major in mathematics and departmental approval. Summer. For secondary school teachers who are working toward Class A certification. Topics will be selected from analysis, algebra and geometry according to the needs and interests of the students enrolled.
- 592-593-594. ACTUARIAL MATHEMATICS (3-3-3). Pr., MH 567. A development of the mathematical theory of life insurances and annuities. The theory of pension funding and valuation. Modelling claims processes and analysis of the ruin problem.
598. SPECIAL TOPICS (1-5). Pr., departmental approval. Topics may vary as needed. May be taken for credit more than once.

COURSES FOR GRADUATE STUDENTS

- 600-601-602-603. APPLIED MATHEMATICS I, II, III, IV (5-5-5-5). Pr., approved graduate standing. Asymptotic series. Approximate solution of linear and nonlinear ordinary differential equations. Asymptotic expansion of Laplace and Fourier integrals. Regular and singular perturbation theory. Boundary layer theory. WKB theory. Multiple scale analysis. Asymptotic methods for difference equations. Acceleration of convergence. Pade approximation.
- 604-605. APPROXIMATION THEORY I, II (5-5). Pr., departmental approval or approved graduate standing. Introduction and theory of some of the important methods of approximation. Includes uniform approximation, best approximation, best trigonometric approximation, least square approximation and rational approximation.
- 607-608-609. INTERPOLATION I, II, III (5-5-5). Pr., departmental approval. Techniques of approximation by interpolation, rates of convergence and methods of estimating error. Simultaneous approximation of functions and their derivatives; spline function interpolation; curve and surface fitting in several variables.
610. SPECIAL FUNCTIONS (5). Pr., departmental approval. Special functions from classical complex analysis which play an important role in the mathematics of physics, chemistry and engineering.
- 611-612. DISCRETE GEOMETRY AND CONVEXITY I, II (5-5). Pr., MH 538-539-540 or 541-542 or departmental approval. Geometric objects and configurations with discrete symmetry groups. Regular polygons and polyhedra. Regular arrangements. Plane tilings and patterns. Convexity and related geometric extremum problems. Packing and covering. Arrangements of extreme density.
613. TENSOR ANALYSIS (5). Pr., departmental approval. Manifolds, differential structure, vector and tensor fields, vector and tensor bundles, differential forms, chains. Topics among the following: differential operations (e. g., Lie derivative, affine connections), de Rham cohomology, Riemannian metric, curvature tensor.
614. INTRODUCTION TO MODEL THEORY (5) Pr., MH 331 and DMS 371 or departmental approval. First-order languages. Satisfaction. Consequences. The completeness and compactness theorems, models constructed from constants. Elementary substructures and embeddings, Lowenheim-Skolem-Tarski theorems. Ultraproducts and ultrapowers.
- 615-616-617. AXIOMATIC SET THEORY I, II, III (5-5-5). Pr., departmental approval. Introduction to modern set theory. The ZF axioms, ordinals, cardinals, CH, GCH, stationary sets, diamond, Martin's axiom and an introduction to the constructible universe, large cardinals and forcing.
- 620-621-622. REAL ANALYSIS I, II, III (5-5-5). Pr., departmental approval. Measure theory and Lebesgue integration, metric spaces, introduction to functional analysis.

- 623-624-625. FUNCTIONS OF A COMPLEX VARIABLE I, II, III (5-5-5). Pr., departmental approval. Complex numbers, analytic functions, derivatives, Cauchy integral theorem and formulae, Taylor and Laurent series, analytic continuation, residues, maximum principles, Riemann surfaces, conformal mapping, families of analytic functions and harmonic analysis.
- 628-629. ADVANCED THEORY OF DIFFERENTIAL EQUATIONS (5-5). Pr., departmental approval. Existence, uniqueness and continuation theorems for ordinary and partial differential equations; nature of solutions. The first quarter will be devoted to ordinary equations, the second to partial differential equations.
- 630-631-632. ALGEBRA I, II, III (5-5-5). Pr., MH 332 and 337 or departmental approval. Groups, rings, fields, modules, vector spaces.
633. THEORY OF GROUPS (5). Pr., MH 631. Sylow theory, abelian groups, chain conditions.
634. THEORY OF RINGS (5). Pr., MH 632 or departmental approval. Structure of rings, ideals in commutative rings.
635. ABELIAN GROUPS (5). Pr., departmental approval. An axiomatic development of abelian group theory; decomposition theorems, finitely generated groups, rank, divisible groups, pure subgroups, basic subgroups, ulm factors.
- 637-638-639. MATRICES (5-5-5). Pr., MH 537 or departmental approval. Jordan form, functions of a matrix, spectral theorem, singular values, norms, quadratic forms, field of values, inertia; 639: topics of current interest.
- 640-641-642. FUNCTIONAL ANALYSIS (5-5-5). Pr., departmental approval. Bounded linear transformations and linear functionals on Banach and Hilbert spaces, including conjugate spaces, adjoint operators, self adjoint operators, spectral theory, applications to particular spaces.
644. PARTIAL DIFFERENTIAL EQUATIONS I (5) Pr., departmental approval. Introduction to second order linear elliptic and hyperbolic equations with an eye towards non-linear and numerical problems, characteristics, domains of dependence, energy integrals, finite difference schemes, Sobolev spaces, maximum principle.
645. PARTIAL DIFFERENTIAL EQUATIONS II (5). Pr., MH 644. Linear and nonlinear parabolic second order initial boundary value problems, reaction-diffusion systems or Navier-Stokes equations. Galerkin method and finite elements. Aspects related to large scale computing should receive special considerations.
646. PARTIAL DIFFERENTIAL EQUATIONS III (5). Pr., MH 645. Further topics from the nonlinear theory, such as conservation laws, shock waves, traveling waves or attractors. Students should be led to own research work in p.d.e. or be prepared for computer studies involving complex systems of p.d.e.
- 648-649. LINEAR CONTROL THEORY I, II (5-5). Pr., MH 265, 266. Linear control systems, controllability, observability, canonical forms, pole assignments, realizations, stability analysis for linear systems, stability and control, regulation and tracking, parameter space design, robust controllers, optimal control, computational aspects of control theory.
- 650-651-652. TOPOLOGY (5-5-5). Pr., MH 522 or 550 or equivalent subject to departmental approval. Separation and countability axioms, covering properties, completeness, connectedness, metric spaces and metrizable, product and quotient spaces, function spaces, homotopy, elementary properties of retracts, fundamental groups, covering spaces and computations of fundamental groups.
653. DIMENSION THEORY (5). Pr., departmental approval. Topological study of dimension in separable metric spaces.
- 654-655-656. POINT SET TOPOLOGY (5-5-5). Pr., MH 652. Upper semi-continuous collections, indecomposable continua, metrization problems, inverse limits, other topics.
- 657-658. EUCLIDEAN TOPOLOGY (5-5). Pr., MH 650. Topology with emphasis on those areas which distinguish among the polyhedra in Euclidean spaces (e. g., Theory of Retracts).
660. ADVANCED NUMERICAL MATRIX ANALYSIS (5). Pr. MH 564 or departmental approval. In-depth study of at least one of the following: discretization matrices for partial differential equations and boundary value problems, sparse matrices, refinements to the QR-algorithm, symmetric eigenvalue problems, singular value decomposition, pseudo-inverses, simplex method, matrix algorithms for vector computers.
661. NUMERICAL SOLUTION OF PARTIAL DIFFERENTIAL EQUATIONS (5). Pr., MH 564 or departmental approval. The numerical solution of partial differential equations using finite difference and finite element methods.
662. OPTIMIZATION THEORY (5). Pr., MH 565 or departmental approval. Unconstrained problems: basic descent, conjugate gradient and quasi-Newton methods. Constrained problems: gradient projection, penalty, cutting plane and Lagrange methods. Credit not allowed for this course and ISE 734.
- 665-666-667. HARMONIC ANALYSIS (5-5-5). Pr., MH 622 or equivalent. Fourier Series, Fourier transforms, convolution and non-convolution operator theory, Littlewood-Paley theory, interpolation and wavelets.
668. ADVANCED TOPICS IN NUMERICAL ANALYSIS (5). Pr., MH 661 or departmental approval. Topics include: solution of sparse systems of equations, parallel and vector algorithms, numerical methods for nonlinear and singular partial differential equations, calculation of eigenvalues and eigenvectors, generation of pseudo-random numbers, numerical filtering techniques.
669. RESEARCH AND SPECIAL PROJECT IN NUMERICAL ANALYSIS (1-3). Pr., departmental approval. For students working on the Master of Applied Mathematics degree with concentration in numerical analysis. (May be taken for credit more than once, with a maximum of 3 credits allowed.)
670. UNIFORM SPACES (5). Pr., MH 652 and departmental approval. Uniform spaces, uniform topology, uniformly continuous functions, completions of uniform spaces, other topics.
671. COMPUTATIONAL GEOMETRY (5). Pr., CSE 360 or equivalent or departmental approval. Introductory course in the design and time-complexity of computer algorithms for geometry problems in the plane and in 3D-space studying the geometric ideas needed for computer-aided design, computer graphics and robotics.

674. FUNDAMENTALS OF TOPOLOGY (5). Pr., departmental approval. Basic course in general topology with focus on aspects relevant to analysis and algebraic topology. Credit not allowed for both MH 650 and 674.
675. ELEMENTARY HOMOTOPY THEORY (5). Pr., MH 674 or equivalent; departmental approval. Homotopy, fundamental groups and associated algebraic concepts, covering spaces.
676. ELEMENTARY HOMOLOGY THEORY (5). Pr., MH 675 or departmental approval. Development of homology groups, axioms for homology, classical geometric applications.
- 677-678-679. ALGEBRAIC TOPOLOGY (5-5-5). Pr., MH 676 or departmental approval. Continuation of and relation between homotopy theory and homology theory. Cohomology theory. Applications to other areas of topology.
- 680-681-682. MODERN STOCHASTIC PROCESSES (5-5-5). Pr., MH 521 or departmental approval and sufficient background in probability. Classical and modern topics in stochastic processes. Basic notions of probability theory. Some important stochastic processes (Markov chains, Poisson process, Brownian Motion). Applications and stochastic models (queues, stationary processes, chaos, branching processes, population dynamics, statistical mechanics). Properties of trajectories. Stochastic integrals. Stochastic Differential Equations. Diffusion processes. Filtering and prediction.
- 687-688-689. REAL FUNCTIONS AND DESCRIPTIVE SET THEORY I, II, III (5-5-5). Pr., MH 622 or equivalent, MH 650 or 674 recommended. Relationships between certain classes of subsets of complete metric space and related classes of real functions: e.g., between the Borel classification of sets and the Baire classification of real functions. Derivatives and approximately continuous functions. The Lebesgue density topology. Basic theory of analytic and coanalytic sets. The classes of Lebesgue measurable, universally measurable and Marczewski measurable sets and functions. Sets and functions with the Baire properties. Singular sets. Category analogs of standard measure theoretic theorems in real analysis.
690. DIRECTED READING (CREDIT TO BE ARRANGED.)
698. SPECIAL TOPICS (1-5). Pr., departmental approval. Topics may vary as needed. May be taken for credit more than once.
699. RESEARCH AND THESIS (CREDIT TO BE ARRANGED.) May be taken more than one quarter.
- 730-731-732. HOMOLOGICAL ALGEBRA (3-3-3). Pr., MH 632 or departmental approval. Categories and functors, homology and cohomology, classes of modules and rings, applications to algebra.
- 740-741-742. ADVANCED FUNCTIONAL ANALYSIS (5-5-5). Pr., MH 622 and 640. Topics from the theory of bounded and unbounded linear operators in Banach and Hilbert spaces; theory of distributions and topological vector spaces with applications; elements of nonlinear functional analysis; topics of current research interest.
- 760-761-762. ADVANCED PROBABILITY (5-5-5). Pr., MH 621 or departmental approval (strong background in real analysis required). Classical limits theorems, conditioning, martingales, Markov chains, random walks, renewal theory, Poisson processes and ergodic theory.
- 763-764-765. ADVANCED STOCHASTIC PROCESSES (5-5-5). Pr., MH 762 or equivalent. Brownian motion, Levy processes, invariance principles, stochastic calculus, Markov processes, stochastic differential equations, local time and excursions, general theory of processes.
790. DIRECTED READING (CREDIT TO BE ARRANGED.) Pr., registration in a doctoral program and departmental approval.
798. SPECIAL TOPICS (1-5). Pr., departmental approval. Topics may vary as needed. May be taken for credit more than once.
799. RESEARCH AND DISSERTATION (CREDIT TO BE ARRANGED.)

Mechanical Engineering (ME)

Professors Dyer, *Chair*, Chin, Goodling, Raju, Signer, Sinha, Walker, Wilcox and Zee

Distinguished University Professor Crocker

Alumni Professor Jang

Associate Professors Beale, Bhavnani, Flowers, Jones, Khodadadi, Mackowski,

Madsen, Suhling and Thakur, Tippur

Assistant Professors Fergus, Gale, Knight, Marghitu, and Yang

General Curriculum, CLA, students (those with undeclared majors) may enroll only with departmental consent.

231. COMPUTER AIDED ENGINEERING (3). LEC. 2, LAB. 3. Pr., CSE 120, MH 163. Numerical analysis and the use of computers and commercial computer software as an engineering tool.
232. DYNAMICS OF MECHANICAL SYSTEMS (5). LEC. 4, LAB. 3. Pr., EGR 205. Coreq., MH 265. Analysis of two-dimensional motion of particles and rigid bodies using Newtonian and energy methods. Kinematics of linkages and mechanisms will be considered.
233. MECHANICS OF MATERIALS (4). LEC. 3, LAB. 3. Pr., EGR 205. Fundamental concepts of stress and strain, transformations, stress-strain relationships, applications to uniaxially loaded members, torsion, normal and shear stresses in beams, beam deflections and combined loading.
260. CONCEPTS IN ENGINEERING DESIGN (2). LEC. 2. Pr., PA 102. Philosophy of design, legal and ethical issues.

280. DESIGN FOR MANUFACTURING (3). Pr., ME 233. Introduction to manufacturing processes, including casting, forming, machining and joining, taken from the perspective of the design engineer. Material selection, measurement and inspection, quality control and design for manufacturing.
300. MECHANICAL ENGINEERING MEASUREMENTS (2). LEC. 1, LAB. 3. Pr., ME 301, 341. Theory and practice of engineering measurements; treatment of experimental data, report writing, liquid and gaseous flow measurements, temperature, pressure and thermophysical properties.
301. THERMODYNAMICS II (5). Pr., EGR 201. Thermodynamics of ideal and real power conversion cycles and devices, introduction to practical systems, availability analysis, property relations and determination, Maxwell's relations, thermodynamics of mixtures, combustion and chemical equilibrium.
302. HEAT TRANSFER I (3). Pr., EGR 201, EE 302, MH 265 or departmental approval. Fundamentals of heat transfer by steady and unsteady conduction and radiation.
303. HEAT TRANSFER II (3). Pr., ME 341, 302 or departmental approval. Fundamentals of heat transfer by free and forced convection, heat exchangers, phase-change heat transfer.
305. DESIGN OF THERMAL SYSTEMS (3). Pr., ME 302. Coreq., ME 303. Design of thermal systems, such as heating, ventilating and air conditioning, power plants and industrial/commercial energy systems. One topic will be chosen each quarter and used in a design project.
340. FLUID MECHANICS I (3). Pr., ME 233. Fluid properties; fluid statics; integral forms of mass conservation, linear momentum balance and angular momentum balance; applications to external and internal flows.
341. FLUID MECHANICS II (3). LEC. 2, LAB. 2. Pr., ME 340. Coreq., ME 301. Conservation of mass; Euler and Bernoulli equations; dimensional analysis and similitude; boundary layer concept; internal viscous flows.
360. MECHANICAL DESIGN I (4). LEC. 3, LAB. 3. Pr., ME 231, 233, 260. Design of components for static and dynamic stresses with emphasis on synthesis and creative design.
361. MECHANICAL DESIGN II (4). LEC. 3, LAB. 3. Pr., ME 360. Design of systems containing a variety of mechanical elements.
362. DYNAMICS OF PHYSICAL SYSTEMS (3). Pr., ME 231, 232, 340, MH 362. Modeling of lumped systems, response of first and second order systems, frequency response techniques and stability.
401. COMPREHENSIVE MECHANICAL ENGINEERING DESIGN I (3). LEC. 2, LAB. 3. Pr., ME 305. Coreq., ME 460. Capstone engineering design course based on a design project similar to those encountered by the practicing engineer in industry involving significant thermal and mechanical design requirements.
402. COMPREHENSIVE MECHANICAL ENGINEERING DESIGN II (3). LEC. 1, LAB. 6. Pr., ME 401. Continuation of ME 401.
454. INTRODUCTION TO DESIGN FOR MANUFACTURE (3). Pr., ME 480. Design methods and part specifications that impact on the manufacture, assembly, service, quality and cost of the product.
460. DESIGN OF CONTROLS FOR MECHANICAL SYSTEMS (4). LEC. 3, LAB. 3. Pr., ME 362. Design of digital and analog controls for mechanical systems - software and hardware.
490. UNDERGRADUATE SEMINAR (2). Pr., mechanical engineering students only. Attendance at a selection of departmental, college and university seminars and events. Intended to provide a broad perspective on a wide range of engineering issues. S-U grading only. May be repeated for up to six hours of credit.
491. DIRECTED READING IN MECHANICAL ENGINEERING (CREDIT TO BE ARRANGED.) Pr., senior standing. A study in areas of current interest within mechanical engineering.
498. HONORS THESIS (1-6). Pr., departmental approval and departmental approval. Individual student directed research and writing of honors thesis. (ME Honors Program students only. May be repeated once for a maximum of six total credit hours.)
499. INDIVIDUAL STUDY (CREDIT TO BE ARRANGED.) Pr., senior standing. Individual study under the guidance of a faculty member.

ADVANCED UNDERGRADUATE AND GRADUATE

516. INTERNAL COMBUSTION ENGINES (3). LEC. 3. Pr., ME 301, 341 or departmental approval. Fundamentals of internal combustion engine (spark and compression-ignited) design and analysis, emphasizing thermodynamic processes.
520. INTRODUCTION TO COMBUSTION (3). Pr., ME 301, 303 or departmental approval. Thermodynamics and chemical kinetics of combustion processes, ignition, characterization and combustion of gaseous, liquid and solid fuels; design of combustors, environmental aspects of combustion.
525. SOLAR ENERGY THERMAL SYSTEMS (3). Pr., ME 303. Review of heat transfer, extraterrestrial and available solar radiation, transmission and absorption of radiation, design of flat plate collectors, concentrating collectors and energy storage.
526. HEAT EXCHANGERS (3). LEC. 3. Pr., ME 303, 341. Fundamental, advanced and practical aspects of the design of heat exchangers for liquid and gas flow.
527. NUMERICAL THERMAL ANALYSIS (3). Pr., ME 303. Introduction to numerical techniques used to analyze thermal performance of devices and systems. Finite difference and finite element software will be used to study conduction, convection and radiation.
530. APPLIED ELASTICITY (3). Pr., ME 233. Equations of elasticity; applications to axially loaded bars and beams; general theory of torsion; axisymmetric problems; stress distributions near holes; curved beams, numerical solutions; design applications.
533. EXPERIMENTAL STRESS AND STRAIN ANALYSIS (3). Pr., ME 361. Applied elasticity; electrical resistance strain gages and associated instrumentation; semiconductor strain gages; transducers; computer-aided data acquisition; uniaxial and torsion testing machines; brittle coatings; design applications.

537. DYNAMICS OF ROTATING MACHINES (3). Pr., ME 231, 232. Issues involved in the design of high speed machinery: modeling, balancing, resonance.
539. FINITE ELEMENT ANALYSIS (3). Pr., ME 233, 303. Fundamentals of finite element analysis. Applications to the design of mechanical components.
540. INTERMEDIATE FLUID MECHANICS (3). Pr., ME 340 or MH 362. Navier-Stokes and Euler equations; stream functions; two-dimensional potential flows; complex variable methods; exact solutions to the Navier-Stokes equations; viscous flows; approximate solutions; mathematical techniques.
541. COMPRESSIBLE FLUID FLOW (3). Pr., ME 340, EGR 201. Properties of ideal gases; general one-dimensional wave motion; isentropic flow with area change; normal shock waves; flow with friction (Fanno flow) and heat transfer (Rayleigh flow).
553. INDUSTRIAL AND ENVIRONMENTAL NOISE CONTROL (3). Pr., ME 231, 232. Sources of industrial and commonly noise, criteria for control, noise measuring instrumentation, issues involved in the design of machinery for minimum noise, noise ordinances and regulations.
554. MACHINERY NOISE AND DIAGNOSTICS (3). Pr., 231, 232. Introduction to machinery diagnostics through noise and vibration signatures. Emphasis on fundamental principles and applications to predictive maintenance of machinery.
560. MECHANICAL VIBRATION (3). Pr., ME 231, 232, MH 362. Dynamics behavior of mechanical systems. Free and forced vibration of single and multi-degree of freedom systems. Matrix methods of analysis.
561. DYNAMICS OF MACHINERY (3). LEC. 3. Pr., ME 231, 232, MH 362. Theory and analysis of mechanical machines by the study of kinematics and force analyses of mechanisms and assemblies of mechanisms.
563. VEHICLE DYNAMICS (3). LEC. 3. Pr., ME 360, 361. Introduction to the basic mechanics governing vehicle performance, analytical methods and terminology.
579. INTRODUCTION TO OPTIMAL SYSTEMS (3). Pr., senior standing. Application of optimal criteria to engineering problems.
591. DIRECTED READING IN MECHANICAL ENGINEERING (CREDIT TO BE ARRANGED.) Pr., senior standing. Areas of current interest within mechanical engineering.
599. INDIVIDUAL STUDY (CREDIT TO BE ARRANGED.) Pr., senior standing. Individual study under the guidance of a faculty member.

COURSES FOR GRADUATE STUDENTS

604. ADVANCED THERMODYNAMICS I (3). Pr., ME 301 and graduate standing. Classical thermodynamics of reactive and nonreactive systems; applications.
605. ADVANCED THERMODYNAMICS II (3). Pr., ME 604. Statistical treatment of the laws and properties of thermodynamic systems; applications.
608. ADVANCED THERMODYNAMICS III (3). Pr., ME 605. Thermodynamics of nonequilibrium processes.
620. HEAT TRANSFER - CONDUCTION (3). Pr., ME 303, MH 362 or departmental approval. Formulations and solutions of steady, periodic and unsteady heat conduction problems.
621. HEAT TRANSFER - CONVECTION (3). Pr., ME 303. General problems of forced and free convection, thermodynamic boundary layers, condensing and boiling, heat transfer to liquid metals and analysis of heat exchangers.
622. HEAT TRANSFER - RADIATION (3). Pr., ME 302. Fundamental laws of radiation, net radiation methods, configuration factors, radiation through absorbing media, solar, terrestrial and celestial radiation and thermometry and temperature control.
623. NUMERICAL METHODS IN HEAT TRANSFER (3). Pr., ME 303 or equivalent. Conduction, convection and radiation heat transfer with emphasis on numerical solution techniques used in problems for which no analytical solution exists.
624. BOILING HEAT TRANSFER (3). Hydro-dynamics of vapor-liquid flow, basic flow models, pool boiling, instabilities in two-phase systems, forced convective boiling, augmentation of boiling heat transfer.
625. COMBUSTION (3). Pr., ME 301, 303 or departmental approval. Thermodynamics and chemical kinetics of combustion processes, ignition, characterization and combustion of gaseous, liquid and solid fuels; design of combustors; environmental aspects of combustion.
630. ADVANCED STRENGTH OF MATERIALS (3). Pr., ME 233, MH 362 or departmental approval. Stress and strain analyses of curved beams and beams on elastic foundations; energy methods, topics from literature; stress and strain analyses in bars of non-circular section subjected to torsion.
631. THEORY OF ELASTICITY I (3). Pr., departmental approval. Theory of stress and strain and stress-strain relations. Laws of balance in momentum, moment of momentum and energy. Solution by tensor stress function and displacement functions.
632. THEORY OF ELASTICITY II (3). Pr., ME 631. Continuation of solutions by potential functions. Solutions of two-dimensional problems by Kolosov-Muskhelishvili methods.
633. ADVANCED EXPERIMENTAL STRESS ANALYSIS (3). Pr., departmental approval. Deformation and stress analysis of solids using optical techniques such as photoelasticity, moiré method, caustics, laser speckles, holograph, moiré and shearing interferometry; introduction to Fourier Optics; Fresnel and Fraunhofer Diffractions, optical spatial filtering.
634. ELASTIC STABILITY (3). Pr., ME 631 or departmental approval. Stability of conservative and non-conservative systems. Buckling of slender bars and thin-walled cross-sections; buckling of plates and shells. Buckling loads by Rayleigh-Ritz, Galerkin and Kantorovich methods.

635. ADVANCED DYNAMICS (3). Pr., MH 362. Dynamics of particles and systems of particles applied to engineering problems. Work and energy and impulse and momentum principles. LaGrange's equations and Hamilton's principle.
636. MECHANICS OF COMPOSITE MATERIALS (3). Pr., ME 233 or departmental approval. Properties and mechanical behavior of fiber-reinforced composite materials, anisotropic stress-strain relationships, transformation relations for material properties, orthotropic elasticity theory, micromechanics, orthotropic plate theory, lamination theory, failure criteria.
637. THEORY OF PLATES (3). Pr., ME 631. Analyses of plates of various shapes under transverse and in-plane loadings with different boundary conditions. Buckling of plates due to in-plane loadings. Introduction to von Karman large deflection theory.
638. THEORY OF SHELLS (3). Pr., departmental approval. Introduction to differential geometry. Development of governing equations for shells under arbitrary loading. Shallow shell theory with applications. Asymptotic method for solution of differential equations in shell theory.
639. VARIATIONAL MECHANICS (3). Pr., departmental approval. The problem of Bolza, Mayer and LaGrange with fixed and variable end points; Hamilton's principle and LaGrange's equations; energy methods; Rayleigh's principle and Rayleigh-Ritz method; Galerkin method; variational methods; application.
640. ADVANCED FLUID MECHANICS I (3). Pr., departmental approval. Mass conservation, linear and angular momentum balance principles and energy equation for fluid systems. Concept of constitutive structure, rate of deformation, spin, curvature-twist rate tensors. Helmholtz, Kelvin theorems. Vorticity, Crocco, Euler, Bernoulli equations.
641. ADVANCED FLUID MECHANICS II (3). Pr., ME 640 or departmental approval. Schwarz-Christoffel transformation, hodograph method, Three-dimensional potential flows, Stoke's stream function, D'Alembert's paradox, concept of apparent mass. Surface waves, effect of surface tension, shallow liquid waves, interface waves. Low Reynolds number solution, Oseen approximation, stability of laminar flows.
642. BOUNDARY LAYER THEORY (3). Pr., ME 640. Hydrodynamic and thermal boundary layers. Prandtl's equations, integral relations and approximate techniques.
643. GAS DYNAMICS (3). Pr., ME 640. Compressible flow equations; isentropic flow; Fanno line flow; Rayleigh line flow; high speed flow shock waves; internal and external flows; forces on immersed bodies.
644. TURBULENCE (3). Pr., ME 641. Analysis of wall-affected and free turbulent flows.
645. NON-NEWTONIAN FLUID MECHANICS (3). Pr., ME 640 or departmental approval. Kinematics of deformation, constitutive equations. Rheometrical flow systems, viscometric and non-viscometric flows. Simple fluid theory. Suspension rheology.
651. FRACTURE MECHANICS (3). Pr., departmental approval. Micro-mechanical aspects of material failure; energy release rate; compliance approach; stress functions and complex potentials; Griffith crack; modes of failure; stress intensity factors; Westergaard's methods; crack opening displacement; small-scale yielding, Irwin and Dugdale models, J-integral concept; HRR fields; fracture toughness testing, optical methods for mapping crack tip fields and evaluations of fracture parameters.
660. VIBRATION OF DISCRETE SYSTEMS (3). Pr., departmental approval. Advanced principles of dynamics, state-space representation, stability and boundedness, free and forced response of systems with multiple degrees of freedom.
661. VIBRATION OF CONTINUOUS SYSTEMS (3). Pr., departmental approval. Dynamics of continuous media, Hamilton's principle. Vibrations and stability of strings, beams and plates. Forced response of continuous systems.
662. RANDOM VIBRATION (3). Pr., departmental approval. Properties of random processes, response of single and multiple degree of freedom systems to random excitation. Design of structures subjected to random loads.
666. CONTROL SYSTEMS ANALYSIS AND DESIGN (3). Pr., departmental approval. Topics from control theory are introduced in the context of control systems analysis and design. Topics include state variable feedback, modal control, optimal control and adaptive control for both continuous and discrete systems.
670. KINEMATICS AND DYNAMICS OF ROBOTS (3). Pr., ME 232, MH 362 or departmental approval. Basic concepts in robotics such as kinematic analysis, homogeneous coordinate transformation, inverse kinematics, Denavit-Hartenberg representation, Lagrangian and Newton-Euler formulations of the dynamic equations of motion and inverse dynamics.
671. CONTROL OF ROBOTIC MOTION (3). Pr., ME 666, 670 or departmental approval. Application of various algorithms in the control of robotic motion, including motion, force compliance, impedance, servo, linear and non-linear control algorithms. Performance measures, hierarchical control concepts.
675. PLANAR MECHANISMS (3). Pr., ME 232. Analysis of simple and complex planar mechanisms. Synthesis by finite displacement and infinitesimal motion methods.
676. SPATIAL MECHANISMS (3). Pr., ME 675. Analysis and synthesis of spatial mechanisms.
677. SELECTED TOPICS IN MECHANICAL DESIGN (3). Pr., departmental approval. Dynamic properties of trains of mechanisms; hydrostatic and hydrodynamic lubrication; thermal equilibrium; wear and fatigue problems; design techniques utilizing modern computational facilities.
678. CONCEPTUAL DESIGN OF MECHANICAL SYSTEMS (3). Pr., ME 360 or departmental approval. Engineering problem definition; solution set development; selection criteria; optimization techniques; utilization of computation methods in the design of components.
680. NOISE CONTROL IN MECHANICAL SYSTEMS (3). Pr., departmental approval. Sound: its propagation; reflection; absorption; scattering; sources in machinery. Alteration of machine parameters for noise reduction.

Military Science

681. DESIGN FOR OPTIMUM ENERGY UTILIZATION (3). Pr., ME 604 or departmental approval. Design and selection of energy systems for optimum energy utilization in commercial, industrial, residential and transportation sectors.
682. ENVIRONMENTAL SYSTEMS DESIGN (3). Pr., ME 604 or departmental approval. Design of environmental systems for the support of life, for comfort, for control of local environmental envelopes.
684. COMBUSTION AND FUEL TECHNOLOGY (3). Pr., EGR 201, ME 303. Conventional and non-conventional fuels, thermodynamics and chemical kinetics of combustion processes, diffusional and kinetically controlled combustion processes, knocking in internal combustion engines, flame front instabilities.
687. AUTOMATIC MACHINERY AND PROCESSES (5). Pr., departmental approval. Analysis and control of automatic machinery and automatic processes. Design and layout of production machinery for automatic and continuous flow.
688. PRODUCTION ENGINEERING LABORATORY (2-5). Pr., MTL 537 or equivalent. Actual production problems associated with highly engineered products are addressed with the goal of reducing transition problems between prototype and full production of high-technology components and systems.
689. ENGINEERING DESIGN PROJECT (CREDIT TO BE ARRANGED.) May be taken more than one quarter. Pr., departmental approval. Non-thesis option in the Master of Mechanical Engineering program. Project description and objective must be stated in letter requesting approval to take course. Provides an optional formal mechanism for students to work on a project for presentation in their final oral examination.
690. SEMINAR (CREDIT TO BE ARRANGED.) May be taken more than one quarter.
691. DIRECTED READING IN MECHANICAL ENGINEERING (CREDIT TO BE ARRANGED.) May be taken more than one quarter.
692. ENGINEERING ANALYSIS (3). Pr., departmental approval. Equilibrium, eigenvalue and propagation problems for continuous systems. Physical laws and mathematical properties discussed with considerable emphasis on numerical solutions.
699. RESEARCH AND THESIS (CREDIT TO BE ARRANGED.) May be taken more than one quarter.
799. RESEARCH AND DISSERTATION (CREDIT TO BE ARRANGED.) May be taken more than one quarter.

Military Science (MS)

Professor Lawing, Head

Assistant Professors Byrd, Enloe and Manges

GENERAL MILITARY COURSE

(Basic Program)

Military Science I

101. THE U.S. ARMY TODAY (1). LEC, LAB. Overview of the United States Army and its role in American society. Lab provides practical experience in military training, leadership and rappelling.
102. CONTEMPORARY MILITARY ISSUES (1). LEC, LAB. An opportunity to research, analyze and discuss current issues involving the military. Lab provides practical experience in military training and leadership.
103. MODERN MILITARY WEAPONS AND OPERATIONS (1). LEC, LAB. In-depth instruction in the use of military weapons, tactics and operations by the United States Army and its allies. Lab provides practical experience in military training and leadership.

Military Science II

201. DEVELOPMENT OF FUTURE U.S. ARMY OFFICERS (1). LEC., LAB. Introduction to the skills and knowledge necessary to be a successful U.S. Army officer. Focuses on the military information briefing and first aid tasks that soldiers and leaders must be prepared to encounter in training and on the battlefield.
202. SMALL UNIT OPERATIONS (1). LEC., LAB. Introduction to organization, purpose and missions of a U.S. Army infantry squad. Focuses on the individual soldier and the squad leader's skills.
203. SMALL UNIT LEADERSHIP (1). LEC, LAB. Introduction to the principles of leadership and the role of the squad leader in a tactical situation.

(Advanced Program)

Military Science III

301. LAND NAVIGATION TECHNIQUES (3). LEC. 3, LAB. Detailed map reading instruction. Includes a day and night land navigation practical exercise conducted at Ft. Benning, Ga.
302. MILITARY TRAINING AND INSTRUCTION (3). LEC. 3, LAB. Introduction to the U.S. Army's Training Management System. Applied practical exercises in planning, coordinating, and executing military training. Conduct of a live-fire M16A1 rifle practical exercise at Ft. Benning, Ga.
303. MILITARY QUALIFICATION SKILLS (3). LEC. 3, LAB. Hands-on military training in basic skills common to all junior officers. Culminates with a weekend practical skills application exercise at Ft. Benning, Ga.
305. RANGER OPERATIONS AND TACTICS (2). LAB 2. Basic Ranger Operations to include patrolling, airmobile operations, mountaineering, light infantry weapons, and land navigation. Frequent field training exercises will be conducted (at least one per quarter).

Military Science IV

401. MILITARY JUSTICE AND ETHICS (3). LEC. 3, LAB. Introduction to the Military Justice System and the military ethic.

402. TRAINING MANAGEMENT (3). LEC. 3, LAB. Intermediate instruction in the principles and techniques for planning, conducting and evaluating training.
403. ADVANCED TRAINING MANAGEMENT II (3). LEC. 3, LAB. Comprehensive instruction in the principles of collective training and training management.
404. LEADERSHIP LAB (0). LAB. 2. Required for advanced ROTC cadets not enrolled in ROTC courses during a quarter due to leave of absence or completion of all commissioning requirements.

Music (MU)

Professors C. Gossett, Smith, Vinson, Faust and Greeleaf
Associate Professors Stephenson, Head, Alexander, Garrison, Howard, Knipschild,
Morgan, Summerville and Wylie
Assistant Professors Byrne, Goldstein, Good, Park, Patrick and Pickett
Instructor S. Gossett and Thomas

(T) indicates courses taught primarily for music education students.

020. SOPHOMORE COMPREHENSIVE EXAMINATION (0). Pr., MU 232. Evaluation of overall musical progress at the end of the sophomore year in written and oral form.
040. SENIOR PROJECT (0). Demonstration of professional level of achievement in the student's given major area.
100. PERFORMANCE ATTENDANCE (0). Required of all music students each quarter. Performance and lectures by faculty, guest artists and students. Music and music education majors are expected to perform at the teacher's discretion and in accordance with departmental rules.
- 131-132-133. MATERIALS AND ORGANIZATION OF MUSIC (5-5-5). A systematic study of harmony, counterpoint, form and style through the literature of music.
- 154-155-156. MUSIC COMPOSITION (1-1-1). Pr., concurrent enrollment in MU 131-132-133. The creative use of basic constructional materials in structured contexts.
- 201-202-203. JAZZ PIANO (1-1-1). Idiomatic harmonic and melodic exercises and their application to the jazz literature, including standard tunes and improvisational situations.
- 204-205-206T. FUNCTIONAL PIANO (1-1-1). Pr., MUA 184/187. Development of functional piano skills for use in classroom, rehearsal or studio. Open to music education majors only.
- 211-212. SERVICE PLAYING (1). Hymn playing, modulation, selected anthems and oratorio selections, simple improvisation and transposition.
- 231-232-233. MATERIALS & ORGANIZATION OF MUSIC (5-5-5). Pr., MU 133. Continuation of harmony, counterpoint, form and style in music.
- 251-252-253. SURVEY OF MUSIC LITERATURE (1-1-1). LEC. AND LAB. 3-3-3. Presentation of instrumental solo, opera and symphonic music, acquainting the student with musical compositions and composers with emphasis on music literature of the past three centuries.
- 254-255-256. MUSIC COMPOSITION (1-1-1). Pr., concurrent enrollment in MU 231-232-233. The creative use of developmental material and sections of standard forms in structured contexts.
271. INTRODUCTION TO MUSIC (3). Open to Elementary Education and HDF Majors only. The understanding of music including an explanation of basic terms, notations, rhythm, tonal system, vocal and piano score readings.
300. INTRODUCTION TO ELECTRONIC MUSIC (3). Pr., departmental approval. An introduction to the literature of and study of the basic production techniques of electronic music.
311. LITURGIES (3). Liturgical worship service of Roman Catholic and Protestant churches, plus non-liturgical forms of other Protestant denominations.
312. HYMNOLOGY (3). The musical significance of hymns of the Christian church from the earliest times to the present.
- 331-332-333. MATERIALS AND ORGANIZATION OF MUSIC (3-3-3). Pr., MU 233. Continuation of second year systematic study of harmony, counterpoint, form and style through the literature of music.
- 334-335-336. MUSIC COMPOSITION I, II, III (1-1-1). Pr., MU 233. Creative experience of various techniques in smaller design and apparatus.
- 337-338-339. MODERN HARMONY I, II, III (3-3-3). Pr., MU 233. 20th century harmonic devices. An integrated approach to understanding contemporary writing with emphasis on original work and analysis of the principal departments from "traditional" harmony.
- 341-342-343. JAZZ, IN THEORY AND PRACTICE (3-3-3). Pr., MU 233 or departmental approval. The application of traditional theoretical concepts and skills to the jazz literature.
- 344-345-346. JAZZ REPERTOIRE (3-3-3). Pr., MU 203. Harmonic and formal analysis of standard jazz literature, with emphasis on reharmonization and variation, leading to development of a professional level repertoire.
- 351-352-353. MUSIC HISTORY I, II, III (3-3-3). Pr., MU 133. Development of music from early times to the present day. Lectures, recorded examples, readings.
- 361-362-363. CONDUCTING I, II, III (2-2-2). Pr., MU 133. (I). Basic conducting technique and introduction to score reading. (II). Advanced conducting technique, score reading, and interpretation with specialization in either choral or instrumental areas. (III). Advanced conducting techniques and score reading with opportunity for practical experience in preparing choral groups and instrumental groups for performance.
- 409T. MARCHING BAND TECHNIQUES (3). Fundamental methods and procedures of the marching band.

- 410T. ORCHESTRAL TECHNIQUES (3). Pr., junior standing. Methods and procedures of rehearsing the orchestra in areas of articulation, tone production, blend, balance, intonation, and musical expression.
- 411T. CHORAL TECHNIQUES (3). Pr., junior standing. Methods and procedures of rehearsing choral groups in areas of diction, tone production, blend, balance, intonation and musical expression.
414. CARE AND REPAIR OF MUSICAL INSTRUMENTS (1). LEC. 1, LAB. 3. Pr., senior standing. Selection, care and repair of woodwind, brass and string instruments with emphasis on adjustments which should be made by the instrumental director.
415. ORGAN LITERATURE AND DESIGN (3). Survey of organ literature correlating the forms of compositions and types of organs for which the music was written.
416. CHURCH MUSIC SEMINAR (3). Pr., MU 311, 312, 361, 362, 415, or 422, or departmental approval. The processes of establishing a complete church music program. Supervised directing of choral ensemble
- 434-435-436. MUSIC COMPOSITION I, II, III (3-3-3). Pr., 233. Analysis, study and writing of musical compositions in small, compound and larger musical forms with emphasis on both stylistic and individual creative writing.
- 437-438-439. JAZZ IMPROVISATION (3-3-3). Pr., MU 346. Practical, supervised performing experiences, with opportunity for practical experience with university and professional ensembles.
- 442T. VOCAL PEDAGOGY (3). For prospective voice teachers. An intensive study of the materials and methods of voice training. Classification and analysis of teaching repertoire.
- 443T. STRING PEDAGOGY (3). Mechanics of stringed instruments. Teaching methods, schools, and systems. Teaching literature and repertoire. For either violin, viola, cello, string bass or harp.
- 444T. INSTRUMENTAL PEDAGOGY (3). Mechanics of brass or woodwind instruments. Teaching methods and repertoire with emphasis on solo instrumental literature.
445. THEORY PEDAGOGY (3). Required of seniors majoring in theory and composition. Presents the problems of sightsinging, rhythmic dictation, melodic and harmonic dictation, and part writing from a pedagogical viewpoint.
- 447-448-449. PIANO PEDAGOGY (3-3-3). For prospective piano teachers. Teaching methods for beginners in private and group instruction. The intermediate and advanced student. Analysis of teaching repertory. Observation and practical experience.
452. VOCAL LITERATURE (3). Pr., junior standing. Vocal literature from Elizabethan time to the present, including representative European and American repertoire.
454. INSTRUMENTAL LITERATURE (3). Pr., junior standing. Literature of the major performance area.
455. OPERA LITERATURE (3). Pr., junior standing. Vocal music of the opera from the Baroque to the present.
- 457-458-459. KEYBOARD LITERATURE (1-1-1). Pr., junior standing. Masterwork for keyboard from the Baroque Period to the present. Restricted to piano pedagogy majors only.
461. ANALYSIS OF JAZZ MASTERWORKS (3). Pr., MU 346. Recorded performances by important performers and composers, including compositional and stylistic analysis and the transcription of improvisational solos.
- 462-463. JAZZ COMPOSING AND ARRANGING (3-3). Pr., MU 346. Emphasis on original work, and the arranging of existing material for large and combo instrumental ensembles and for vocal ensembles.
- 471-472-473. PIANO SKILLS AND TEAM TEACHING (PRACTICUM) (2). Discussion of piano skills as they are taught through student literature. Supervised individual, and team teaching and observation of identified excellent teachers of pre-college students.
477. INSTRUMENTAL ARRANGING (3). Pr., MU 233 or departmental approval. Project course in arranging various instrumental combinations from quartet to symphonic band.
478. CHORAL ARRANGING (3). Pr., MU 233 or departmental approval. Project course in arranging for various combinations.

ADVANCED UNDERGRADUATE AND GRADUATE

- 522-523-524. THEORY REVIEW (3-3-3). No credit for Performance, Composition or Pedagogy majors. Harmonic techniques of the 18th and 19th centuries, with emphasis on style and design.
- 537-538-539. ORCHESTRATION I, II, III (3-3-3). Pr., MU 233. Ranges, notation, and characteristics of orchestral instruments. Exercises in arranging for combinations of string and wind instruments. Theory and practice of orchestration for full orchestra.
553. CHORAL LITERATURE (3). Pr., junior standing. Chronological study of choral music from the Middle Ages to the present including opera, and oratorio with detailed examination of representative works.
554. HISTORY AND LITERATURE OF THE WIND BAND (3). Pr., junior standing. History of development of the wind band and its literature from ca. 1500 to the present.

GENERAL ELECTIVE COURSES

130. FUNDAMENTALS OF MUSIC (3). Music primarily to develop functional piano skills, sight-reading, rhythm and melodic skills, and the basics of musical construction (scales, intervals, keys, and triads).
172. HONORS MUSIC (3). The art music and folk music of various western and non-western cultures with emphasis on the cultural, social and economic environment affecting the composers' artistic decisions. (Honors Program).
273. APPRECIATION OF MUSIC (3). May not be taken for credit by Music majors. Outstanding composers and compositions. No previous music training required; an orientation in the art of listening.
372. HISTORY OF JAZZ (3). Growth of Jazz from its African and European roots to current experimentation.

GROUP PERFORMANCE COURSES

- 121-122-123. **UNIVERSITY SINGERS (1 HOUR CREDIT PER QUARTER)**. May be taken with or without credit. A select choral ensemble for study and performance of madrigals, pop music, show tunes, and choral music of the jazz idiom. Open to any Auburn student by audition only.
- 124-125-126. **CONCERT BAND (1 HOUR CREDIT PER QUARTER)**. Members of the Band are selected during the first week of each quarter. A minimum of four rehearsal hours per week is required, with extra rehearsals scheduled as necessary. Band members are required to be present at all rehearsals and all public performances. Students enrolled in Concert Band will have the drill portion of Basic Military Training waived. (May be taken with or without credit.)
- 127-128-129. **ORCHESTRA (1 HOUR CREDIT PER QUARTER)**. Members of the symphonic orchestra are selected by tryouts during the first week of each quarter. (May be taken with or without credit.)
134. **JAZZ LABORATORY BAND (1)**. A musical ensemble for the study and performance of music relating to the jazz idiom. By audition only.
- 141-142-143. **GOSPEL CHOIR (1-1-1)**. Open to any Auburn student by consent of director. (May be taken with or without credit.)
- 218-219-220. **WOMEN'S CHORUS (1-1-1)**. Open to any Auburn female student by consent of choral director. (May be taken with or without credit.)
- 221-222-223. **MEN'S CHORUS (1-1-1)**. Open to any male Auburn student by consent of choral director. (May be taken with or without credit.)
224. **MARCHING BAND (1 HOUR CREDIT PER QUARTER)**. Fall. Provides music for athletic contests and half-time shows at football games, various parades, pep rallies and other campus and off-campus events. During the fall quarter, will rehearse a minimum of six hours per week. Physical Education may be waived for marching band members. Also, students will have the drill portion of basic military waived when enrolled in Marching Band. See band director for details. (May be taken with or without credit.)
227. **OPERATIC STAGE TECHNIQUE (1 HOUR CREDIT PER QUARTER)**. Pr., sophomore standing and departmental approval. Theory and practice of character development through movement and improvisation as they apply to the demands of the musical/operatic stage.
- 228-229. **OPERA WORKSHOP (1 HOUR CREDIT PER QUARTER)**. Pr., MU 227. Open to all students interested in opera, including performance, stage-craft, make-up, conducting and coaching. A minimum of three hours per week rehearsal or stage-craft is required with extra time scheduled as necessary. (May be taken with or without credit.)
- 321-322-323. **CONCERT CHOIR (1 HOUR CREDIT PER QUARTER)**. Concert choir is a mixed chorus for study and performance of serious choral literature; open to any Auburn student by audition only. (May be taken with or without credit.)
- 324-325-326. **MUSIC ENSEMBLE (1 HOUR CREDIT PER QUARTER)**. departmental approval. Primarily for advanced musicians for the study and performance of musical compositions for small instrumental and vocal groups. A minimum rehearsal of three hours per week required. (May be taken with or without credit.) Includes brass, woodwind, percussion, vocal and piano ensembles.
327. **PIANO ENSEMBLE (1 HOUR CREDIT PER QUARTER)**. Study through performance of the ensemble literature for keyboard. May be repeated for credit.
- 347-348-349. **VOCAL CHAMBER MUSIC (1 HOUR CREDIT PER QUARTER)**. Primarily for vocal performance and choral music education majors of junior standing and above. Others may be accepted by audition or departmental approval. Preference will be given to voice type needed. Preparation for performance of solo ensemble literature - duets, trios, quartets, quintets, sextets, etc. In addition to piano accompaniment, other instrumentation may be employed as called for in the particular composition. At such times, credit may also be given to instrumentalists.
- 424-425-426. **MUSIC ENSEMBLE (1)**. Pr., departmental approval. Primarily for advanced musicians for the study and performance of musical compositions for small instrumental and vocal groups. A minimum rehearsal of three hours per week required. (May be taken with or without credit.) Includes brass, woodwind, percussion, and piano ensembles.

PERFORMANCE

Individual instruction is available in voice, piano, organ, strings, woodwinds, harp, brass, guitar and percussion. One 1-hour lesson or two half-hour lessons per week. Students desiring study in performance must be approved by the head of the Department of Music before entrance into the course.

080. **PERFORMANCE (0)**. May be repeated. Individual instruction in instrumental or vocal areas. Rudimentary practice as related to each discipline.
181. **PERFORMANCE (3)**. Individual instruction in instrumental or vocal areas for performance, church music majors only. May be repeated.
184. **PERFORMANCE (1)**. Individual instruction in instrumental or vocal areas. For piano pedagogy, theory/composition, bachelor of arts majors, and music education minors. May be repeated.
187. **PERFORMANCE (1)**. Individual instruction in instrumental or vocal areas. For students in elementary and secondary education, and performance minors and electives. May be repeated.
381. **PERFORMANCE (3)**. Pr., six quarters of MUA 181. Individual instruction in instrumental or vocal areas. Performance and Church majors only. May be repeated.

384. PERFORMANCE (1). Pr., six quarters of MUA 184. Individual instruction in instrumental or vocal areas. For piano pedagogy, theory/composition, bachelor of arts majors, and music education minors. May be repeated.
387. PERFORMANCE (1). Pr., six quarters of MUA 187. Individual instruction in instrumental or vocal areas. For students in elementary and secondary education and performance minors and electives. May be repeated.
660. PERFORMANCE (3-3-3).

The amount of credit in Performance study is based on the following practice schedule:

1 cr. hr. — 5 hours weekly practice.

3 cr. hrs. — 15 hours weekly practice.

Individual instruction Fees Per Course (Per Quarter) . . . \$80.00

This additional fee to be paid at the time of registering for each Performance Course of individual instruction. Instruction is available in one hour or two half-hour lessons per week.

CLASS INSTRUCTION IN PERFORMANCE

The Music Department offers a number of classes in Performance open to Music Majors and Minors and to regularly registered college students who have had previous music training. These classes meet two hours per week and carry one hour credit.

- 101-102-103T. GUITAR CLASS (1-1-1). (2-2-2 LEC. AND LAB.). Class instruction and practice in the rudiments of music as applied to the guitar.
- 104-105-106. PIANO CLASS (1-1-1). (2-2-2 LEC. AND LAB.). Class instruction and practice in the rudiments of music as applied to piano playing.
- 107-108-109. VOICE CLASS (1-1-1). (2-2-2 LEC. AND LAB.). Class instruction and practice in the rudiments of music as applied to voice.
- 110-111-112T. STRING INSTRUMENTS CLASS (1-1-1). (2-2-2 LEC. AND LAB.). Class instruction and practice in the rudiments of music as applied to violin, viola, cello and contrabass playing.
- 113-114-115T. BRASS INSTRUMENTS CLASS (1-1-1). (2-2-2 LEC. AND LAB.). Class instruction and practice in the rudiments of music as applied to trumpet, trombone and other brass instruments.
- 116-117-118T. WOODWIND INSTRUMENTS CLASS (1-1-1). (2-2-2 LEC. AND LAB.). Class instruction and practice in the rudiments of music as applied to clarinet, oboe, bassoon, flute and other woodwind instruments.
- 119T. PERCUSSION INSTRUMENTS CLASS (1). (2 LAB.). Class instruction and practice in the rudiments of music as applied to playing the snare drum.
- 120T. ADVANCED PERCUSSION INSTRUMENTS CLASS (1). LEC. 2. LAB. Pr., MU 119T or departmental approval. Class instruction and practice in the rudiments of music as applied to playing timpani, the keyboard mallet instruments and the other miscellaneous percussion instruments.

COURSES FOR GRADUATE STUDENTS

- 600-601-602. ADVANCED INSTRUMENTAL OR CHORAL CONDUCTING (2-2-2). (3-3-3 FOR CHORAL CONDUCTING MAJORS). Laboratory for development of skills relating to the performance of traditional and modern works. Emphasis on score reading and analysis. Participation in an approved instrumental or choral ensemble is required.
603. BRASS INSTRUMENTS TECHNIQUES (1). LEC. 1. LAB. 3. Designed to work out specific problems with graduate students in furthering their knowledge of and skill on brass instruments. Participation in an approved instrumental organization is required. May be repeated for a maximum of 3 hours credit.
604. WOODWIND INSTRUMENTS TECHNIQUES (1). LEC. 1. LAB. 3. Designed to work out specific problems with graduate students in furthering their knowledge of and skill on woodwind instruments. Participation in an approved instrumental organization is required. May be repeated for a maximum of 3 hours credit.
605. PERCUSSION INSTRUMENTS TECHNIQUES (1). LEC. 1. LAB. 3. Designed to work out specific problems with graduate students in furthering their knowledge of and skill on percussion instruments. Participation in an approved instrumental organization is required. May be repeated for a maximum of 3 hours credit.
606. MUSIC IN THE ARTS (4). Music in relation to architecture, the plastic arts and poetry.
607. CHORAL LITERATURE OF THE CLASSIC, ROMANTIC AND MODERN PERIODS (4). Detailed analysis of the styles, forms and performance practices of the choral music from the Classic, Romantic and Modern periods, working primarily with scores of representative works. Participation in an approved choral organization is required.
608. CHORAL ARRANGING (4). Pr., departmental approval. Advanced arranging for various choral combinations. Participation in an approved choral organization is required. May be repeated for a maximum of 8 hours credit for students majoring in Choral Conducting.
609. SEMINAR IN 20TH CENTURY MUSIC (3). Pr., departmental approval. Analysis and comparison of representative works of principal composers of the first half of the 20th century. Specific works chosen for each quarter. May be repeated for credit up to 9 hours.
610. BAND ARRANGING (4). Pr., departmental approval. Advanced arranging for various band organizations. Participation in band is required.
611. ORCHESTRAL ARRANGING (4). Pr., departmental approval. Advanced arranging for various orchestral organizations. Participation in orchestra is required.
612. ACOUSTICS IN MUSIC (3). Pr., departmental approval. Basic survey of the physics of sound as related to music.

Naval Science

613. DIRECTED INDEPENDENT STUDY (1-6). Study in which the student's learning efforts are guided toward desired objectives. Includes evaluation by professor and student at regular intervals.
614. INTRODUCTION TO GRADUATE RESEARCH IN MUSIC (3). Extensive examination of research materials (books, music and recordings). Includes the preparation of an outline and bibliography for a research paper.
615. SEMINAR IN RENAISSANCE MUSIC (3). Pr., departmental approval. Selected Renaissance music through history, analysis and performance practice. May be repeated once for credit.
616. SEMINAR IN BAROQUE MUSIC (3). Pr., departmental approval. Selected Baroque music through history, analysis and performance practice. May be repeated once for credit.
617. SEMINAR IN CLASSICAL MUSIC (3). Pr., departmental approval. Selected Classical music through history, analysis and performance practice. May be repeated once for credit.
618. SEMINAR IN ROMANTIC MUSIC (3). Pr., departmental approval. Selected Romantic music through history, analysis and performance practice. May be repeated once for credit.
619. ANALYTICAL TECHNIQUES (2). Form, structure and related terminology as these elements relate to music from all periods in music history.
620. AMERICAN MUSIC (3). Pr., departmental approval. Topics from America's musical history, from the 17th century to the early 20th century.
621. MODAL COUNTERPOINT (2). Pr., departmental approval. Polyphonic practice of the 16th century, based primarily on the music of Palestrina.
622. TONAL COUNTERPOINT (2). Pr., departmental approval. Polyphonic practice of the early 18th century, based primarily on the music of J. S. Bach.
634. MUSIC HISTORY SEMINAR (2). Pr., departmental approval. An in-depth study of different aspects of the history of music. Specific research areas chosen each quarter. May be repeated for a maximum of six hours.
644. REPERTOIRE SEMINAR (2). Pr., departmental approval. The literature of the student's major area through analysis and performance. May be repeated for credit up to six hours.
- 650-651-652. TECHNIQUES OF PRIVATE INSTRUMENTAL INSTRUCTION (2-2-2). Pr., departmental approval. Analysis of teaching and supervised teaching.
- 653-654-655. TECHNIQUES OF PRIVATE INSTRUCTION IN VOICE (2-2-2). Pr., departmental approval. Analysis of teaching and supervised teaching.
660. INDEPENDENT STUDY IN PERFORMANCE (3). Pr., departmental approval. May be repeated for credit not to exceed 12 hours. Advanced private study and public performance each quarter.
670. INDEPENDENT STUDY IN PERFORMANCE (2). (SECONDARY ED.). Pr., departmental approval. Applied study for graduate students in Music Education and Choral Conducting. May be repeated for credit.
- 681-682-683. INDEPENDENT STUDY IN (A) COMPOSITION, (B) ANALYSIS (2-3, 2-3, 2-3). Pr., departmental approval.
697. QUALIFYING RECITAL (5).

Naval Science (NS)

Professor Ellis, *Head*

Associate Professor Payton

Assistant Professors Davis, Engle and Harley

111. INTRODUCTION TO NAVAL SCIENCE (3). LEC. 3, LAB. 2. Fall. Basic areas of naval science including uniforms and insignia, military courtesy, discipline, components and supporting elements of the Navy.
- 112-113. NAVAL SHIPS SYSTEMS I-II (2-2). LEC. 2, LAB. 2. I Winter, II Spring. Principles of ship design, construction and stability. Impaired stability and damage control. Shipboard auxiliary systems, basic electricity, introduction to thermodynamics and steam cycle as applied to naval propulsion systems. Advanced propulsion and ship design including nuclear power and gas turbine engines.
211. NAVAL WEAPONS I (3). LEC. 3, LAB. 2. Fall. Weapons systems through a study of fundamental principles of sensor, tracking, computational, and weapons delivery subsystems.
212. NAVAL WEAPONS II AND SEAPOWER (3). LEC. 3, LAB. 2. Winter. Practical applications of naval weapons systems including current employment of naval platforms and an introduction to broad principles, concepts and elements of naval history, seapower and maritime affairs covering pre-World War I.
213. SEAPOWER AND MARITIME AFFAIRS (3). LEC. 3, LAB. 2. Spring. A survey course covering World War I to the present dealing with broad principles, concepts and elements of naval history, seapower and maritime affairs with application to the United States and other world powers.
- 311-312. NAVIGATION I & II (3-3). LEC. 3, LAB. 2. I Fall, II Winter. Theory and principles of piloting involving the use of visual and electronic aids. The theory, principles, and procedures of celestial navigation.
313. NAVAL OPERATIONS (3). LEC. 3, LAB. 2. Spring. Navy tactical formations and dispositions, relative motion, Rules of the Road, maneuvering board and communications.
- 321-322-323. EVOLUTION OF WARFARE (3-3-3). LEC. 3, LAB. 2. Fall, Winter, Spring. Forms of warfare practices to identify historical continuity and change in the evolution of warfare. Demonstrates concepts of strategy; examines great captains and military organizations of history to discover ingredients of their success. Explores the impact of historical precedent, economic factors and technological change on politico-military thought and action.

- 411-412-413. PRINCIPLES OF NAVAL LEADERSHIP AND MANAGEMENT. (3-3-3). LEC. 3, LAB. 2. Fall, Winter, Spring. Fundamentals of management theory. Case studies in the methods of leadership. Naval core values and ethics. The Uniform Code of Military Justice from the division officer's perspective. Naval personnel administration, material management and correspondence.
- 421-422-423. AMPHIBIOUS WARFARE (3-3-3). LEC. 3, LAB. 2. Fall, Winter, Spring. Amphibious warfare prior to WWII through Grenada; definitions of concept, examination of doctrinal origins, evolution of amphibious warfare tactics and techniques, and the current structure of the Fleet Marine Force and its equipment.

Nursing (NUR)

Professors Kitchens and Brower
Associate Professor Pitts

Assistant Professors Ellison, Hamner, Hendricks, Huffstutler, Martin and Stevenson
Instructors Hackett, Lambert, Mullins, Widell and Wilder

101. ORIENTATION TO NURSING (2). Fall. An introduction to the discipline of nursing.
201. INTRODUCTION TO STATISTICS FOR HEALTHCARE PROFESSIONALS (5). LEC. 2, LAB. 2. Pr., MH 160. Introductory skills in descriptive and inferential statistics required for reading and applying research in the healthcare professions.
302. DIMENSIONS OF PROFESSIONAL NURSING (2). Pr., admission to the Professional Nursing Program. Fall. Conceptual and theoretical foundations for nursing are present. Introduces the concept of professionalism as essential to the discipline of nursing.
303. HEALTH ASSESSMENT ACROSS THE LIFE SPAN (4). LEC. 3, LAB. 2. Fall. Pr., admission to the Professional Nursing Program. Prepares students to perform comprehensive health assessment on individuals across the life span.
310. NURSING CONCEPTS I (8). LEC. 4, LAB. 8. Pr., admission to the Professional Nursing Program. Fall. Concepts and theories basic to the art and science of nursing. Emphasizes the nursing process as the basis for nursing decision-making.
311. NURSING CONCEPTS II (12). LEC. 5, LAB. 14. Pr., NUR 302, 303, 310, ZY 440. Winter. Concepts, theories and clinical experiences related to assisting individuals and families to adapt to selected health alterations across the life span.
312. NURSING CONCEPTS III (12). LEC. 5, LAB. 14. Pr., NUR 311, ZY 441. Spring and Summer. Continuation of concepts, theories and clinical experiences related to assisting individuals and families to adapt to selected health alterations across the life span.
313. PSYCHIATRIC/MENTAL HEALTH NURSING (7). LEC. 3, LAB. 8. Pr., NUR 311, ZY 441. Spring and Summer. Emphasizes nursing interventions to facilitate successful psychosocial adaptations for individuals and groups. Stressors that result in psychosocial impairments are examined.
391. CONTEMPORARY WOMEN'S HEALTH ISSUES (3). Pr., sophomore standing or above. Explores common health stressors and contemporary health issues for women across the lifespan.
392. PROMOTING HEALTHY LIFESTYLES ACROSS THE LIFESPAN (3). Pr., sophomore standing or above. Health promoting and illness preventing lifestyle behaviors for individuals across the lifespan. Includes historical, political, economic and cultural factors influencing health.
393. THE ART OF CARING (3). Pr., NUR 302, 310. Builds upon existing knowledge of the delivery of health care. Addresses philosophical, social and ethical principles in the practice of professional nursing. Emphasis is on the concept of caring as a guide for clinical practice.
395. NURSING MANAGEMENT OF PHARMACOLOGIC THERAPY IN CLIENT SYSTEMS (3). Pr., successful completion of ZY 440, 441, NUR 310. Coreq., NUR 311 or 412. Interdependent role functions in the nursing management of clients receiving drug therapy. Concepts in primary, secondary and tertiary prevention are discussed as they relate to effects of pharmacologic agents on body systems.
396. HUMAN SEXUALITY IN HEALTH AND ILLNESS (3). Pr., junior standing, open to all University students. Human sexuality in relation to the health continuum. Opportunity to view sexuality across the life span.
399. CHRONIC ILLNESS IN CHILDREN (3). Pr., junior standing. For students pursuing careers in professions that serve children with chronic illnesses or disabling conditions. These conditions will be examined as to alterations in body systems, usual treatment and implications for the child.
401. TRANSITION INTO PROFESSIONAL NURSING (4). LEC. 4, LAB. 4. Pr., acceptance into the EARN Program. Summer. Concepts and theoretical formulations that underlie professional nursing practice.
- 401L. TRANSITION INTO NURSING PRACTICE (2). Pr., admission to EARN Program. Coreq., ZY 445 and NUR 401. Provides registered nurse students with opportunities to apply concepts and theoretical formulations of professional nursing practice in clinical settings.
410. BASIC CONCEPTS IN PRIMARY, SECONDARY AND TERTIARY PREVENTION (4). Pr., admission to AND Program. Coreq., NUR 302, 303, 410L, ZY 445. Concepts and theoretical formulations that underlie primary, secondary and tertiary prevention in client systems. Emphasizes nursing process as a framework for exploring the impact of physiological, psychological, sociocultural, spiritual and developmental variables on client system stability using a lifespan approach.
- 410L. PROFESSIONAL PRACTICE I (4). Pr., admission to AND Program. Coreq., NUR 410. Provides clinical learning opportunities to implement selected nursing roles with individuals and families in various clinical settings. Focuses on the nursing process as a systematic approach to health promotion and maintenance.

411. PRIMARY, SECONDARY AND TERTIARY PREVENTION IN CLIENT SYSTEMS I (6). Pr., NUR 410, 410L. Coreq., NUR 395, 411L. Introduces the use of the nursing process in analyzing physiological, psychological, sociocultural, developmental and spiritual variables relevant to secondary and tertiary prevention of health alterations in selected body systems using a lifespan approach.
- 411L. PROFESSIONAL PRACTICE II (8). Pr., NUR 410, 410L. Coreq., NUR 395, 411. Provides clinical learning opportunities to plan, implement and evaluate secondary and tertiary prevention activities with clients of different cultures and at various stages of lifespan development in selected clinical settings.
412. PRIMARY, SECONDARY AND TERTIARY PREVENTION IN CLIENT SYSTEMS II (6). Pr., NUR 395, 411, 411L. Coreq., NUR 412L. Continues clinical learning opportunities to plan, implement and evaluate secondary and tertiary prevention learning activities with clients of different cultures and at various stages of lifespan development in selected clinical settings.
- 412L. PROFESSIONAL PRACTICE III (8). Pr., NUR 395, 411, 411L. Coreq., NUR 412. Continues clinical learning opportunities to plan, implement and evaluate secondary and tertiary prevention learning activities with clients of different cultures and at various stages of lifespan development in selected clinical settings.
420. ADVANCED CONCEPTS IN PRIMARY, SECONDARY AND TERTIARY PREVENTION (6). Pr., NUR 412, 412L. Coreq., NUR 420L. Advanced concepts and theoretical formulations related to primary, secondary and tertiary prevention of complex, multidimensional health alterations in individuals and groups at various stages of development.
- 420L. PROFESSIONAL PRACTICE IV (8). Pr., NUR 412, 412L. Coreq., 420. Provides clinical learning opportunities to practice primary, secondary and tertiary prevention with individuals and groups experiencing complex, multidimensional health alterations using a lifespan approach.
421. PRIMARY PREVENTION IN CLIENT/FAMILY SYSTEMS (3). Pr., NUR 303, 401, 401L, ZY 445. Coreq., NUR 421L. Concepts and theoretical formulations that underlie primary prevention with client/family systems.
- 421L. PRIMARY PREVENTION IN CLIENT/FAMILY SYSTEMS LAB (3). Pr., NUR 303, 401, 401L, ZY 445. Coreq., NUR 421. Provides clinical learning experience in primary health care settings to implement nursing roles in primary prevention for client/family systems.
422. FAMILY AND COMMUNITY HEALTH NURSING (12). LEC. 4, LAB. 16. Pr., successful completion of junior-level nursing courses. Fall, Winter. Emphasizes health promotion and maintenance, illness care and rehabilitation of families and groups in community settings.
423. PRIMARY, SECONDARY AND TERTIARY PREVENTION IN COMMUNITY SYSTEMS (3). Pr., NUR 421, 421L. Coreq., NUR 423L. Advanced concepts and theoretical formulations that underlie the nurse's role in primary, secondary and tertiary prevention in community settings.
- 423L. PRIMARY, SECONDARY AND TERTIARY PREVENTION IN COMMUNITY SYSTEMS LAB (3). Pr., NUR 421, 421L. Coreq., NUR 423. Provides clinical learning opportunities to practice primary, secondary and tertiary prevention with individuals and groups in community settings.
425. PRIMARY, SECONDARY AND TERTIARY PREVENTION IN ACUTE CARE SETTINGS (4). Pr., NUR 401, 401L. Coreq., NUR 425L. Concepts and theoretical formulations that underlie the nurse's role in primary, secondary and tertiary prevention of complex health alterations of client/family systems in acute care settings.
- 425L. PRIMARY, SECONDARY AND TERTIARY PREVENTION IN ACUTE CARE SETTINGS LAB (5). Pr., NUR 401, 401L. Coreq., NUR 425. Provides clinical learning opportunities to plan, implement and evaluate primary, secondary and tertiary prevention activities with clients/families in acute care settings.
427. PRIMARY, SECONDARY AND TERTIARY PREVENTION APPLIED TO REHABILITATION AND HOME HEALTH CARE (4). Pr., NUR 425, 425L. Coreq., NUR 427L. Concepts that underlie the nurse's role in prevention of complex health alterations of client/family systems in rehabilitation and home health settings.
- 427L. PRIMARY, SECONDARY AND TERTIARY PREVENTION APPLIED TO REHABILITATION AND HOME HEALTH CARE LAB (5). Pr., NUR 425, 425L. Coreq., NUR 427. Provides clinical opportunities to plan, implement and evaluate primary, secondary and tertiary prevention activities with clients/families in rehabilitation and home health settings.
429. EARN PRACTICUM (9). Pr., NUR 427, 427L, 436. Coreq., NUR 450, 475, 475L. Provides opportunities to implement new skills and integrate knowledge and values learned in the program into nursing practice.
432. NURSING RESEARCH (3). Pr., successful completion of junior-level nursing courses. Fall. Explores the research process as a systematic means for contributing to nursing knowledge. Emphasis is on the use of research knowledge in providing nursing care for individuals, families and groups.
435. INFORMATION MANAGEMENT IN NURSING (3). LEC. 2, LAB. 2. Pr., NUR 311. Winter, Spring. Theory and practice related to information management systems and their applicability to health care delivery and research.
436. NURSING RESEARCH AND DATA MANAGEMENT (3). Pr., AND-NUR 395, 411, 411L; EARN-NUR 401, 401L. Prepares students to critique research for applicability to nursing practice. Includes all components of the research process and emphasizes the importance of research as systematic means for refining and extending nursing knowledge. Incorporates computer technology.
450. SENIOR SEMINAR (3). Pr., NUR 422, 427, 427L, 432, 435, 436-EARN, 460, 495. Coreq., NUR 429, 475 and 475L-EARN. Spring. Emphasizes role socialization essential for entry to the practice of professional nursing. Issues and stressors in professional practice.
460. NURSING CONCEPTS IV (12). LEC. 4, LAB. 16. Pr. Successful completion of junior-level courses. Fall, Winter. Promotes a holistic approach to the care of clients experiencing multisystem stress as a result of crisis across the life span. Focus on the clinical roles and responsibilities of the professional nurse in selected specialty areas.

471. HONORS THESIS (1-6). Open to persons in the University Honors Program and with consent of the student's Honors advisor.
475. LEADERSHIP/MANAGEMENT AND INFORMATION SYSTEMS IN NURSING (3). Pr., AND-NUR 412, 412L, 436; EARN-NUR 401, 401L, 436. Coreq., NUR 475L. Provides theoretical foundation for implementation of the leadership/management role of the professional nurse in health care organizations. Emphasizes application of theoretical formulations from nursing and related disciplines to management of information nursing systems in a rapidly changing, technological environment.
- 475L. INFORMATION SYSTEMS LAB (1). Pr., AND-NUR 412, 412L, 436; EARN-NUR 401, 401L, 436. Coreq., NUR 475. Provides laboratory opportunities to apply selected database and spreadsheet computer programs to the nurse-manager role in simulated lab situations involving nursing systems.
490. DIRECTED INDEPENDENT STUDY (1-6). Pr., NUR 310. May be repeated to a maximum of six hours credit. Directed readings and/or clinical study in student-selected areas related to nursing.
491. SPECIAL STUDY IN MEDICAL/SURGICAL NURSING (3). Pr., completion of junior year. Allows students to gain additional experience in a selected medical/surgical specialty.
492. AIDS: A SOCIAL EPIDEMIC (3). Pr., junior standing. Psychosocial, physical, ethical and legal aspects of AIDS.
495. MANAGEMENT IN NURSING (3). Pr., successful completion of junior-level courses. Fall. The leadership component of the professional nursing role is discussed. Concepts and theories related to leadership and management are presented for assimilation into practice.
497. PROFESSIONAL NURSING SEMINAR (4). Pr., NUR 420, 420L, 436, 475, 475L. Coreq., NUR 498. Provides opportunities to acquire in-depth knowledge of nursing and health care issues. Content and learning experiences facilitate socialization into the professional nursing generalist role. Serves as a forum for practicum experiences as they relate to societal forces, the health care system and the nursing profession.
498. AND PRACTICUM (14). Pr., NUR 420, 420L, 436, 475, 475L. Coreq., NUR 497. Preceptorship experiences which provide opportunities to synthesize nursing knowledge, values and skills in various nursing roles with a selected role model.
499. SENIOR PRACTICUM (15). LEC. 1, LAB. 28. Pr., NUR 422, 432, 435, 460, 495. Spring. Provides clinical learning opportunities which enable students to synthesize theoretical and empirical knowledge from nursing and the scientific and humanistic disciplines in preparation for assuming the professional nurse role.

ADVANCED UNDERGRADUATE AND GRADUATE

600. RESEARCH DESIGN AND INFERENTIAL STATISTICS (6). Pr., undergraduate research course or equivalent. Principles of scientific integrity, elements of the research process, models of utilization and collaborative skills.
604. DIAGNOSTIC PROCESS (5). LEC. 2, LAB. 6. Pr., NAH 620. Prepares students to complete an accurate patient history and physical examination and utilize the diagnostic reasoning process to develop diagnoses.
613. PHARMACOLOGY AND THERAPEUTICS (6). LEC. 6. Pr., graduate standing and permission of course coordinator at each site. Analysis and utilization of principles of pharmacology and pharmacokinetics for planning, implementing and evaluating therapeutic pharmacology interventions.
698. RESEARCH PROJECT SEMINAR (1-5). LEC. Varies. Pr., completion or concurrent enrollment in NUR 600. Emphasizes collaborative participation in the research process.

The following graduate courses are offered at Auburn University School of Nursing (AUSON) in conjunction with the University of Alabama at Birmingham School of Nursing (UABSON) collaborative outreach masters program. The remaining courses in the Primary Care Advanced Practitioner of Nursing Master of Science in Nursing degree are offered by UABSON via satellite to students on the AU campus. This is a distance learning program which allows all courses for the MSN, Primary Care Family Nurse Practitioner degree to be taken on the AU campus. The final degree is awarded by UAB. For further information, contact the dean's office at the AU School of Nursing.

622. PRIMARY HEALTH CARE OF CHILDREN AND WOMEN (9). LEC. 4, LAB. 11. Pr., NAH 621. The diagnosis and health care management of children and pregnant women in primary care settings.
692. RESIDENCY IN FAMILY HEALTH NURSING (12). LEC. 2 six-hour seminars, LAB. 24 clinical hours per week (240 per quarter). Pr., NFH 622 and completion of all other clinical courses in program of study. Application of previously learned theories and knowledge from nursing and other disciplines to the continued development of clinical decision-making skills.

Nutrition and Food Science (NFS)

Professor Keith

Associate Professors Gropper, *Interim Head*, Craig-Schmidt, Crayton, Kent and Struempier
Assistant Professors Bell, Chesnutt, Fellers, Hubbard, Popovich and Weese
Instructor Dillard

200. NUTRITION AND HEALTH (3). Principles of human nutrition and food choices related to the health of individuals.
201. INTRODUCTORY FOOD SCIENCE AND TECHNOLOGY (3). Principles of major food processing methods, concepts of food quality, nutrition, sanitation, safety of food additives and food laws. Overview of careers in food science and food technology.

202. PRINCIPLES OF FOOD PREPARATION (3). Pr., CH 103 or BI 105 and NFS 200. Basic chemical and biological principles underlying the fundamental processes and standards of food preparation.
- 202L. PRINCIPLES OF FOOD PREPARATION LABORATORY (2). LAB. 4. Pr., CH 103 or BI 105, NFS 200. Coreq., NFS 202. Laboratory experience in the basic chemical and biological principles underlying the fundamental processes and standards of food preparation.
206. FOOD AND HEALTH. (3). LEC. 2, LAB. 3. Selection and preparation of basic foods with an introduction to meal planning to meet daily nutritional needs and time-money budgetary constraints. Not open to majors in Nutrition and Food Science (NFS, HRM) or Vocational Home Economics.
304. QUANTITY FOOD PREPARATION (3). Pr., junior standing and NFS 202. Principles of preparing and serving food in the institutional setting.
- 304L. QUANTITY FOOD PREPARATION LABORATORY (2). LAB. 4. Pr., junior standing and NFS 202, 202L. Coreq. or Pr., NFS 304. Laboratory experience in an assigned food service operation. A TB test is required.
307. SURVEY OF DIETETICS (1). LEC. 1, LAB. 2. Pr., junior standing. Role and professional conduct of dietitians in various institutions. Open to students in NFS (Plan V/Dietetics option) major.
318. NUTRITIONAL BIOCHEMISTRY (4). Pr., CH 203. Chemistry of carbohydrates, fats, proteins, vitamins and minerals applied to human nutrition.
- 318L. NUTRITIONAL BIOCHEMISTRY LABORATORY (1). LAB. 3. Pr., CH 203. Coreq., NFS 318 for majors in NFS. Application of laboratory techniques and instrumentation in measuring nutrients in biological materials.
324. FOOD PRESERVATION (3). LEC. 2, LAB. 3. Pr., NFS 202, 202L, MB 300 or departmental approval. Food spoilage mechanisms and their prevention.
338. STUDY ABROAD OPPORTUNITIES IN HUMAN SCIENCES (1). Introduction to the international scope of Human Sciences by examining language, climate, economics, food, clothing, shelter and family life in selected cultures of interest; an exploration of study abroad opportunities in pursuit of an International Minor in Human Sciences.
372. FUNDAMENTALS OF NUTRITION (3). Pr., CH 203, BI 101 Principles of human nutrition and factors influencing nutrient requirements.
382. PRINCIPLES OF NORMAL NUTRITION I (4). Pr., ZY 250, 251 and NFS 318. Physiological and biochemical bases for energy-yielding nutrients needs of the healthy individual.
- 382L. NUTRITIONAL ASSESSMENT (1). Coreq., NFS 382 or 392. Identification and comparison of various techniques for evaluation of nutritional status including dietary intake and anthropometric and biochemical indices.
392. PRINCIPLES OF NORMAL NUTRITION II (5). Pr., NFS 382. Pr., or Coreq., 382L. Physiological and biochemical bases for vitamin and mineral needs of the healthy individual.
408. INDEPENDENT OR FIELD STUDY (3-8). Laboratory or field experiences approved and supervised by a faculty member. May be repeated for a maximum of eight credit hours.
409. ORIENTATION TO DIETETIC INTERNSHIP (1). Pr., senior standing in Dietetics Option. Preparatory course for American Dietetic Association internship application.
429. SEMINAR IN NUTRITION AND FOOD SCIENCE (1). Pr., senior standing. Lectures, demonstrations and literature reviews by staff, students and guest lecturers.
456. FOOD SERVICE ORGANIZATION AND MANAGEMENT (5). Pr., NFS 304, MN 310. Management principles, methods of control and personnel management related to quantity food service management.
462. COMMUNITY NUTRITION (3). Pr. or Coreq., NFS 392. Assessment of community nutritional status and methods used to affect change.

ADVANCED UNDERGRADUATE AND GRADUATE

502. CLINICAL NUTRITION (5). Pr., NFS 392. Application of principles of nutrition and diet to the pathophysiological and biochemical changes associated with diseases of selected organ systems.
524. PROFESSIONAL INTERNSHIP (12). Departmental approval and a minimum Auburn University g.p.a. of 2.0. Application of principles and theories of specified discipline in a professional setting. (A) Hospitality Management (B) Food Science (C) Nutrition. Cannot receive credit for both NFS 490 and 524.
538. STUDY/TRAVEL IN NUTRITION AND FOOD SCIENCE (2-8). May be repeated for up to 12 undergraduate credits or eight graduate credits. Pr., Human Sciences core and departmental approval. Concentrated study in NFS in U.S. or foreign locations which offer unique resources for investigation in one of these content areas. Lectures presented at prearranged points. Papers required on selected phases.
543. FOOD CHEMISTRY (5). LEC. 4, LAB. 3. Pr., NFS 318. Chemistry and changes occurring in food components during processing, storage and handling.
545. FOOD ANALYSIS AND QUALITY CONTROL (5). LEC. 3, LAB. 4. Pr., NFS 543 or equivalent. Sensory, chemical and instrumental food analysis and their application to quality assurance.
555. HUMAN RESOURCE MANAGEMENT IN HOSPITALITY (5). Pr., MN 310, HRM 340, 460 or departmental approval. Law and practices relevant to the management and development of human resources as specifically related to the contemporary hospitality industry. Emphasis on issues within the context of quality service and ethics.
562. NUTRITION AND PHYSICAL PERFORMANCE (5). Pr., ZY 251, NFS 318 or equivalent and junior standing. Energy, carbohydrates, proteins, fluids, vitamins/minerals and nutrition ergogenic aids and how these relate to physical performance.
564. FOOD PRODUCT DEVELOPMENT (5). LEC. 3, LAB. 4. Pr., NFS 202, CH 203 or equivalent. Formulation of food products through variation of food components and processing procedures with subjective and objective evaluation.

574. CLINICAL NUTRITION II (3). Pr., NFS 502. Continuation of application of principles of nutrition in treatment of disease.
570. CONTINUOUS QUALITY IMPROVEMENT IN HOSPITALITY (3). Pr., HRM 460 or NFS 456. Principles and practices of continuous quality assurance and total quality management from a hospitality perspective.
577. FOOD PLANT SANITATION (4). LEC. 3, LAB. 2. Pr., MB 201 or 300 or departmental approval. Sanitary regulation and procedures for hazard control and quality assurance in the food industry.
578. NUTRITION AND FOOD SCIENCE IN SOCIETY (3). Pr., course in nutrition or food science. Current concepts in the social, cultural and psychological aspects of nutrition and food science and related fields.
588. INTERNATIONAL NUTRITION AND FOOD SCIENCE (3). Pr., satisfactory course in nutrition and food science. Nutritional status of world population and local, national and international programs for improvement.
592. NUTRITION IN THE LIFE CYCLE (5). Pr., NFS 392 and junior standing. Metabolic and clinical approach to nutrition throughout the life cycle. Emphasis on groups for whom nutrition is more crucial.
598. SPECIAL TOPICS IN HOSPITALITY (3). Pr., HRM 460. Topics related to the area of hotel and restaurant management: (A) Perspectives in Global Hospitality, (B) Conference Coordination, (C) Resort and Club Management, (D) Recreational Food Service Management. May be taken for credit more than once by registering for different topics, but for a maximum of nine hours.

COURSES FOR GRADUATE STUDENTS

605. METHODS OF RESEARCH IN HUMAN SCIENCES (3). Pr., satisfactory course in statistics with credit. Research and investigation methods applicable to the various areas of Human Sciences. Required of all graduate students in Nutrition and Food Science.
609. SPECIAL PROBLEMS IN NUTRITION AND/OR FOOD SCIENCE. (CREDIT TO BE ARRANGED.) (2-5). Pr., departmental approval. May be taken more than one quarter.
620. ADVANCED FOOD SCIENCE: CARBOHYDRATES. (5). Pr., NFS 564 or departmental approval. Functional properties of simple sugars, starches and food hydrocolloid in food systems.
621. ADVANCED FOOD SCIENCE: PROTEINS AND FATS. (5). Pr., NFS 564 or departmental approval. Functional properties of proteins and fats in food systems.
622. INDUSTRIAL FOOD PRESERVATION (5). LEC. 4, LAB. 3. Pr., NF 340. Effects of processing on food components and complex food systems.
628. LABORATORY RESEARCH METHODS IN NUTRITION AND FOOD SCIENCE (5). Acquaints graduate students with modern laboratory techniques used in human nutrition and food science research.
651. NUTRITION I: THE MACRO NUTRIENTS (5). Pr., ADS 618 OR CH 519. The digestion, absorption, transport and metabolism of these nutrients.
652. NUTRITION II: THE MICRO NUTRIENTS (5). Pr., ADS 619 or CH 519. The digestion, transport and metabolism of vitamins and minerals.
653. NUTRITION III: NUTRITIONAL ASSESSMENT (5). Assessment of nutritional status.
655. SEMINAR IN NUTRITION AND FOOD SCIENCE (1). Required for all graduate students in nutrition and food science. Current topics in nutrition and food science presented by graduate students.
656. DIRECTED READINGS IN NUTRITION AND FOOD SCIENCE (3-5). Critical analysis of classic and current literature in nutrition and food science.
699. RESEARCH AND THESIS (CREDIT TO BE ARRANGED.) Must be taken for a minimum of 6 hours during the graduate program.
798. SPECIAL TOPICS IN NUTRITION AND FOOD SCIENCE (3). Pr., departmental approval. May be taken for credit more than once, but for a maximum of 9 hours. Topics related to the area of nutrition and food science: (A) Risk Assessment, (B) Lipids in Health and Disease, (C) Advanced Protein Metabolism in Humans, (D) Antioxidants and Health, (E) Energy Metabolism, Regulation and Integration, (F) Reaction Kinetics and Shelf Life Prediction of Foods.
799. RESEARCH AND DISSERTATION (CREDIT TO BE ARRANGED.) Must be taken for a minimum of 12 hours during the graduate program.

HOTEL AND RESTAURANT MANAGEMENT (HRM)

101. INTRODUCTION TO HOSPITALITY MANAGEMENT (2). Overview of the hotel, restaurant, club and travel fields and how their components interact.
320. HOSPITALITY FINANCIAL MANAGEMENT (4). Pr., AC 211. Financial systems and statements in the hospitality industry.
330. HOSPITALITY LAW (4). Pr., HRM 101, AC 241 or 255. Laws and litigation that pertain to and impact the operation of hotels, restaurants and clubs.
340. HOSPITALITY MARKETING (3). Pr., HRM 101, MT 331. Marketing techniques and issues applicable to the hotel and restaurant environments.
410. RESTAURANT MANAGEMENT (4). Pr., NFS 200, 202, 202L, HRM 320, 330, 340, MN 310. Managerial aspects of successful restaurant operation and fundamental principles of restaurant and menu design.
446. CATERING (3). LEC. 2, LAB. 3. Pr., NFS 304. Types of catered food service functions: planning, pricing, organization, management, equipment and service.
450. HOTEL MANAGEMENT (4). Pr., HRM 320, MN 310. Management of the rooms division, food and beverage departments and other profit centers.

460. ADVANCED SERVICE MANAGEMENT (4). Pr., HRM 101 and junior standing. Characteristics and needs of the premium service segment of the hospitality industry.
480. ADVANCED BEVERAGE MANAGEMENT (3). Pr., HRM 410. Beverage management and control in commercial food service.
490. PROFESSIONAL INTERNSHIP IN HOSPITALITY MANAGEMENT (5). Pr., junior standing in HRM and approval of internship application which includes proof of having worked 400 hours in any position in the hospitality industry. Structured internship in the hospitality industry.

Pharmaceutical Sciences (PY)

Professors Ravis, Head, Clark, DeRuiter, Doorenbos, Hamrick, Parsons and Riley
Associate Professors Banga, Betageri and Smith
Assistant Professor Kompella

301. PHARMACEUTICS I (3). LEC. 3. Pr., 03 PY or first-year PYD standing. Coreq., PY 301L. Physical-chemical principles are applied to develop an understanding of solid dosage forms and homogeneous liquid dosage forms. Selected official preparations are considered from this viewpoint.
- 301L. PHARMACEUTICS I LABORATORY (1). LAB. 3. Coreq., PY 301. Application of principles and techniques to preparation and usage of solid dosage forms including powders, tablets, capsules and prolonged release types.
302. PHARMACEUTICS II (3). LEC. 3. Pr., PY 301, 301L, 316. Coreq., PY 302L. Continuation of PY 301 dealing with heterogeneous and plastic systems and the physical and chemical principles applicable to plastic and polyphasic dosage forms including suspensions, colloids, mixtures, ointments, creams, emulsions and lotions.
- 302L. PHARMACEUTICS II LABORATORY (1). LAB. 3. Pr., PY 301, PY 301L. Coreq., PY 302. Application of principles and techniques to preparation and usage of liquid, heterogeneous and plastic dosage forms including solutions, syrups, elixirs, suspensions, emulsions, ointments, creams and lotions.
316. MODERN METHODS OF DRUG ANALYSIS (4). LEC. 3, LAB. 3. Pr., CH 518. Coreq., PY 301. Theory and application of physical and chemical methods with emphasis on the use of chromatography, instrumentation, and nonaqueous systems in the analysis of pharmaceutical products.
401. PHARMACEUTICS III (3). LEC. 4. Pr., PY 302, 302L. Coreq., PY 420 and 531 or second-year PYD standing. Influence of formulation on the therapeutic activity of a drug in a dosage form, emphasizing effects of dosage forms on biological response, physiological factors which may affect the drug contained in the dosage form and the dosage form of the drug itself.
402. PHARMACEUTICAL BIOTECHNOLOGY (3). Pr., PY 401, 451, PYD 401. Principles of biotechnology as they relate to the pharmaceutical sciences, including recombinant DNA technology, recombinant proteins and oligonucleotides, monoclonal antibodies and drug delivery systems.
403. PHARMACEUTICS IV (3). LEC. 3. Pr., PY 401. Coreq., PY 422, 533, PC 448. Introduction to the prescription, its interpretation, handling, compounding and dispensing together with pertinent calculations and techniques.
- 403L. PHARMACEUTICS IV LAB. (1). LAB. 3. Coreq., PY 403. Compounding and dispensing of prescriptions and proprietaries are practiced.
419. ESSENTIALS OF DRUG ACTION (5). Pr., CH 519, PY 316, ZY 561. Physical and chemical properties of drugs, autotoxins and vitamins; principles of pharmacology.
420. MEDICINAL CHEMISTRY I (4). Pr., CH 519, PY 316, 419, ZY 561; Coreq., PY 401, 531. Relationship of physicochemical properties to the pharmacological actions of therapeutic agents. The mechanism of action, classification and structure-activity relationships of drugs in terms of their physical and chemical properties.
421. MEDICINAL CHEMISTRY II (4). Pr., PY 420, 531; Coreq., PY 532. Continuation of PY 420.
422. MEDICINAL CHEMISTRY III (4). Pr., PY 421, 532; Coreq., PY 403, 533. Continuation of PY 421.
423. SURVEY OF MEDICINAL CHEMISTRY (5). Pr., CH 305 or departmental approval. Credit in PY 420, 421 or 422 precludes credit for this course. A survey of the molecular action of drugs which emphasizes the relationships of physicochemical and structural properties of organic compounds to their pharmacologic activity.
434. NUCLEAR PHARMACY (3). LEC. 3. Pr., PY 532. Use of radioisotopic material in the diagnosis and treatment of disease, including the nature of radiation and its interaction with biological material, measurement of radioactivity, preparation of dosage forms, safe handling of isotopes and legal requirements of radiopharmacy.
- 434L. NUCLEAR PHARMACY LAB. (1). LAB. 3. Pr., or Coreq. PY 434. Laboratory experience designed to meet certification requirements in nuclear pharmacy. Includes experiments in characteristics of ionizing radiation, instrumentation, dosimetry and dose preparations using the molybdenum-technetium generator and kits.
436. CANCER CHEMOTHERAPY (3). LEC. 3. Pr., PY 533, departmental approval. Consideration of theoretical and practical aspects of drug use in therapy of neoplasms.
444. HYPERTENSION SCREENING AND EDUCATION (1). Pr., PC 448. A comprehensive review of the etiology, pathology, and pharmacotherapeutics of hypertension. Participation in community screening and education experiences is required.
445. DIABETES (1). Pr., 4 PY standing. Physiology, pathology, and treatment of diabetes. Monitoring techniques of home therapy.
450. PRINCIPLES OF DRUG ACTION I (4). Pr., CH 519, ZY 561 and PYD standing. Systematic study of the chemical and physicochemical properties of drugs and the biochemical mechanisms of drug action.

451. PRINCIPLES OF DRUG ACTION II (4). Pr., second-year PYD standing. Chemical and physicochemical properties of drugs and the biochemical mechanisms of drug action, including neurologic agents, antihypertensives and others.
452. PRINCIPLES OF DRUG ACTION III (4). Pr., PY 451, PYD 401. Chemical and physicochemical properties of drugs and the biochemical mechanisms of drug action, including antibiotics, antimicrobial and antineoplastic agents.
495. SPECIAL PROBLEMS (1-3). Pr., departmental approval. May be repeated for a maximum of eight credit hours.
502. PRINCIPLES OF PHARMACOKINETICS (4). LEC. 4, LAB. 3. Pr., PY 401, PC 448 or second-year PYD standing. The time course of drug absorption, distribution, metabolism and excretion and the pharmacodynamic relationships.
531. PHARMACOLOGY I (4). Pr., PC 347, PY 419; Coreq., PY 401, 420. Biochemical and physiological effects, action mechanism, absorption, distribution, biotransformation, excretion and therapeutic and other uses of drugs.
532. PHARMACOLOGY II (4). Pr., PY 420, 531; Coreq., PY 421. Continuation of PY 531.
533. PHARMACOLOGY III (4). Pr., PY 421, 532; Coreq., PY 403, 422. Continuation of PY 532.
534. TOXICOLOGY LABORATORY (1). LAB. 3. Pr., ZY 561, PY 531 or departmental approval, Coreq. PY 535. Exercises in acute and chronic toxicity, isolation, identification and analysis of metals, organic acids and bases from biological specimens.
535. TOXICOLOGY (5). Pr., ZY 561. The basic science of poisons including the acute and chronic toxicology of common environmental, agricultural, industrial, commercial, medicinal and natural products.
536. CELLULAR PHARMACOLOGY (5). Pr., ZY 561, CH 519. Cytological basis of pharmacodynamics including metabolic energy transformation, protein synthesis and cellular control systems as related to drug actions.
537. FUNDAMENTALS OF BIONUCLEONICS (3). LEC. 2, LAB. 3. Pr., PS 207, departmental approval and second professional year standing. Theoretical and practical application of trace level radioactivity for research application to pharmacy and allied sciences.
539. NEUROPHARMACOLOGY OF DRUGS OF ABUSE (3). Pr., PY 531 or equivalent. In-depth analysis of drugs of abuse, including pharmacokinetics, pharmacodynamics, addiction, physical dependence and effects of drug use during pregnancy. Substance abuse treatment strategies will also be discussed.
550. PHARMACOGNOSY (3). LEC. 2, LAB. 3. Pr., CH 519 and ZY 561 or departmental approval. Medicinal plants, folk medicines and poisonous plants including constituents and uses.

COURSES FOR GRADUATE STUDENTS

601. PARENTERAL PREPARATIONS (5). LEC. 3, LAB. 6. Pr., PY 401 and departmental approval. Theory, preparation and testing of various medicinal preparations intended for injection into the body. Pharmaceutical and bacteriological principles are applied to problems of filtration, sterilization, isotonicity, hydrogen ion concentration and aseptic techniques.
602. TABLET MANUFACTURE (5). LEC. 2, LAB. 9. Pr., PY 401. Essentials in the manufacture, coating and evaluation of compressed tablets.
603. PRODUCT DEVELOPMENT (5). LEC. 3, LAB. 6. Pr., PY 401. Formulation, evaluation and control techniques as well as actual manufacture of products of a pharmaceutical and cosmetic nature.
605. NOVEL DOSAGE FORMS (5). Pr., PY 301 and 302 or departmental approval. Theoretical basis and design of controlled release and site specific drug delivery systems such as transdermals, microspheres, ocular inserts, liposomes and antibodies.
606. FORMULATION AND DELIVERY OF PEPTIDE/PROTEIN DRUGS (5). Pr., PY 605 or departmental approval. Formulation and delivery problems unique to peptide/protein pharmaceuticals such as the biotechnology derived products and strategies to overcome such problems.
607. TRANSPORT PHENOMENA IN PHARMACEUTICAL SYSTEMS (5). LEC. 5. Pr., PY 401 or equivalent. Mechanisms of drug transport in various pharmaceutical dosage forms and biological systems. Elucidation of methods to characterize drug transport phenomena. Correlation of transport phenomena with drug disposition in the body. Emphasis on peptide, protein and oligonucleotide drugs.
608. ADVANCED BIOPHARMACEUTICS (5). LEC. 3, LAB. 6. Pr., departmental approval. The relationship between physical and chemical properties of a drug and its dosage forms and the biological effects elicited following administration, together with the relevant pharmacokinetics.
611. STABILITY AND REACTION KINETICS OF PHARMACEUTICALS (5). Pr., departmental approval. Principles of chemical kinetics as applied to the unique stability problems of the various pharmaceutical dosage forms.
- 620-621-622. CHEMISTRY OF SYNTHETIC DRUGS (5-5-5). Pr., PY 422 or departmental approval. Historical background, pertinent literature, organic name reactions, nomenclature, relation of chemical structure and physical properties to biological activity, isosterism, metabolite antagonism, enzyme inhibition; an exhaustive consideration of the chemistry and biological activity of the various therapeutic classes.
- 623-624-625. SYNTHESIS OF DRUGS (5-5-5). LEC. 2, LAB. 9. Coreq., PY 620-21-22 or departmental approval. Laboratory procedures in the intermediates and representative compounds studied in PY 620-21-22.
- 626-627. ANALYTICAL AND CONTROL METHODS (5-5). LEC. 3, LAB. 6. Pr., PY 316 or departmental approval. An extensive study of the principles and techniques of analysis as applied to the various therapeutic and toxicological classes.
630. NEUROPHARMACOLOGY (5). Pr., CH 519, PY 531 or equivalent. Neurochemical mechanisms related to the pharmacological actions of medicinal agents affecting the central nervous system.
- 631-632. PSYCHOPHARMACOLOGY I-II (5-5). Pr., PY 630 or equivalent. Neurochemical bases of mental disorders. PY 631 includes discussions on anxiety, depression and related disorders and 632 includes discussions on schizophrenia, Alzheimer's disease, experimental methods and animal models of disorders.

Pharmacy Care Systems

- 633. PHARMACOLOGY RESEARCH METHODS (4). LEC. 1. LAB. 9. Experimental design, research methods and data analysis in Pharmacology.
- 636. NEUROPHARMACOLOGY OF DRUG DEPENDENCE (5). Pr., PY 531 or equivalent. Neurochemical changes that occur during chronic use; theories on the cause(s) of the drug dependence; provides information on current and proposed pharmacological treatment(s) of drug addiction.
- 637. PHARMACOLOGY-TOXICOLOGY SEMINAR (1-3). May be repeated for a maximum of three hours.
- 650. METABOLISM AND DISPOSITION OF XENOBIOTICS (3). Pr., CH 518 and ZY 560 or equivalent. Portals of entry, absorption, distribution and elimination of drugs and xenobiotics. Metabolic mechanisms relevant to chemical structure and principles of pharmacokinetics will be emphasized.
- 651. ENVIRONMENTAL TOXICOLOGY (5). Pr., PY 650 or CH 518 and ZY 560 or equivalent. Mechanisms of action of agricultural and industrial chemicals, drugs, radiation, metals, gases, air particulates, food additives and food poisoning in the environment.
- 660. HETEROCYCLIC MEDICINAL CHEMISTRY (5). Pr., departmental approval. The chemical nature and behavior of heterocyclic moieties which are either themselves of medicinal significance or are components possessing therapeutic properties.
- 680. GRADUATE SEMINAR (1). Pr., admission to Graduate School. Required of all pharmacy graduate students.
- 881. DIRECTED READING IN PHARMACAL SCIENCES (1-5). Pr., departmental approval and 10 hours of 600-level courses. May be repeated for a maximum of 10 hours.
- 695. SPECIAL PROBLEMS (2-5). Pr., departmental approval. May repeat for a maximum of eight hours.
- 899. RESEARCH AND THESIS (CREDIT TO BE ARRANGED.)
- 799. RESEARCH AND DISSERTATION (CREDIT TO BE ARRANGED.)

Pharmacy Care Systems (PCS)

Professors Barker, Head, Berger and Pearson

Associate Professors Anderson-Harper and Felkey

Adjunct Assistant Professors Henry, King, Miller and Swenson

- 265. DRUGS AND YOUR HEALTH (3). LEC. 3. Pr., non-pharmacy majors, sophomore standing. Rational use of prescription and non-prescription medications. Topics include: using illicit drugs and chemical substances appropriately; development of drugs; economic factors which impact on health care; drugs and pregnancy, children, and the elderly; and the use of self-help medications for a variety of conditions.
- 351. PHARMACEUTICAL CARE (3). Pr., first-year B.S. or first-year PYD standing. Introduction to delivery of health care services with emphasis on the role of the profession of pharmacy.
- 361. PRINCIPLES OF PHARMACOECONOMICS (2). Pr., PCS 351. The provision of patient care within containment constraints.
- 362. INTRODUCTION TO MEDICATION INFORMATION SYSTEMS (3). LEC. 2. LAB. 3. Pr., PY standing. Introduction to the design, control and planning of electronic information systems used to implement medication orders and manage the medication distribution system. Five concepts are emphasized.
- 461. INSTITUTIONAL PHARMACY I (5). LEC. 5. Pr., PY standing. The development of hospitals, their place in society, importance and place of pharmacy in hospitals and nursing homes. The organization, staffing, services, legal requirements, development of institutional pharmacy departments, and interdepartmental relationships to provide comprehensive pharmacy services.
- 462. HOSPITAL PHARMACY LABORATORY (1). LAB. 3. Pr., PY 401 and departmental approval. Course may be repeated for a maximum of three credit hours. Hospital pharmacy experience is obtained in the environment of participating hospitals. Students are expected to furnish transportation for this elective course.
- 464. PHARMACY JURISPRUDENCE (3). Pr., first-year B.S. or first-year PYD standing. Basic legal and ethical principles of pharmaceutical patient care and their effect on the patient drug use process.
- 465. PHARMACY OPERATING SYSTEMS (3). Pr., PCS 351. Methods of systems and decision analysis applied to problems of optimizing the use of money, equipment, drug products, information and personnel within community and institutional environments.
- 466. ENVIRONMENT OF DRUG DELIVERY (3). Pr., PCS 351. Basic political, legal, social, ethical and economic principles of delivering the drug component of health care to patients.
- 469. DRUG LITERATURE RETRIEVAL AND ANALYSIS (4). Coreq., PC 447. Evaluation of current therapeutic and drug literature using the scientific method models.
- 470. CLINICAL DRUG TRIALS (3). LEC. 3. Pr., PCS 469. The design, planning, and execution of protocols for Phase I, II, and III clinical drug trials, including the relative merits of prospective and retrospective methodologies for various disease states.
- 471. PROFESSIONAL COMMUNICATION I (3). LEC. 2. LAB. 3. Pr., second-year B.S. or first-year PYD standing. The nature, purpose and process of communication for the Health Professional. Interviewing, detailing, advertising, and patient counseling are covered along with patient education and information dissemination.
- 472. PROFESSIONAL COMMUNICATION II (3). LEC. 2. LAB. 3. Pr., PCS 471. Continuation of PCS 471.
- 490. HONORS READINGS AND SPECIAL TOPICS (3-6) Pr., admission to the University Honors Program and junior or senior standing. May be repeated to a maximum of six hours. Open only to students in the University Honors Program with the consent of the Honors Program advisor.
- 491. HONORS THESIS (1-4) Pr., admission to the University Honors Program and junior or senior standing. Open only to students in the University Honors Program with the consent of the Honors Program advisor.

Pharmacy Doctorate

495. SPECIAL PROBLEMS (1-3). Pr., departmental approval. Individualized investigation of pharmacy care systems problems as related to the delivery of health care services.
509. INSTITUTIONAL PHARMACY II (3). Pr., PC 448, PCS 461 and departmental approval. Presentation of the development, responsibilities, classification, organization and administration of the pharmacy in hospitals, nursing homes, etc., from the viewpoint of the administrative pharmacist. Surveys the responsibilities of the director of pharmacy service in a hospital.
531. TOPICS IN CLINICAL PHARMACY ADMINISTRATION (2). LEC. 2. Pr., PY standing. Mechanisms of health care reimbursement and the initiation and maintenance of a clinical service.
563. PUBLIC HEALTH (5). LEC. 4, LAB. 3. Pr., BY 302, PCS 469 or equivalent. Epidemiological study of diseases of man. A survey of the public health and preventive medicinal programs of federal, state, local and private agencies is included.
564. DRUG DISTRIBUTION SYSTEMS (3). LEC. 3. Pr., PCS 362, PCS 465, PCS 464. Application of principles of cybernetics to drug distribution systems in hospitals, nursing homes and other inpatient facilities.

COURSES FOR GRADUATE STUDENTS

680. GRADUATE SEMINAR (1) Pr., admission to Graduate School. Required of all pharmacy graduate students each quarter.
681. HOSPITAL PHARMACY ADMINISTRATION (3). Pr., PM 609 or departmental approval. Administrative and policy-making procedures regarding hospital economics, planning, staffing, communications, directing, controlling, design of facilities and operations. Provides understanding of the socioeconomic aspects of hospital pharmacy practice and competence in selected administrative skills needed by administrative pharmacists.
- 682-683. RESEARCH METHODS AND DESIGN IN HEALTH SCIENCE I, II (3-3). Pr., DMS 501 or equivalent or PM 682 or equivalent for PM 683. Description and application of scientific methods to research problems in the health care field, including problem formulation, operational definitions, hypotheses, validity, reliability, research design, data collection by observation, questionnaires and interviews, cost effectiveness analysis, clinical drug investigations and critiquing research.
684. MEDICATION INFORMATION SYSTEMS (3). Pr., PCS 562 or departmental approval. Design, control and planning of information systems used to implement medication orders and manage the medication distribution system.
686. THE PHARMACIST'S ROLE IN TREATMENT ADHERENCE (5). Pr., PCS 682. Theories and methodologies involved in adherence to medication regimens.
695. SPECIAL PROBLEMS (2-5). Pr., departmental approval. May repeat for a maximum of eight credit hours.
699. RESEARCH AND THESIS (CREDIT TO BE ARRANGED.)
799. RESEARCH AND DISSERTATION (CREDIT TO BE ARRANGED.)

Pharmacy Doctorate (PYD)

340. PHARMACY PRACTICE EXPERIENCE I (1). Pr., first-year PYD standing. First of an eight-course introduction to the practice setting providing experiential activities in the provision of pharmaceutical care. S-U grading.
342. PHARMACY PRACTICE EXPERIENCE II (1). Pr., PYD 340, PCS 471. Continuation of PYD 340. S-U grading.
401. PRINCIPLES FOR ANTIMICROBIAL AGENTS AND IMMUNOLOGIC THERAPY (4). Pr., second-year PYD standing. Basic concepts of microbiology and immunology applied to decisions about antimicrobial and immunologic drug therapy.
402. DRUG LITERATURE I (3). Pr., ZY 561, CH 519, PCS 361, 471. Computer-assisted drug information-retrieval, analysis and communication.
403. DRUG LITERATURE II (3). Pr., PYD 401, PY 451, 401. Drug information analysis focusing on epidemiology.
411. PHARMACOTHERAPY I (3). Pr., PY 402, 452, 502, PYD 403, 442, PC 451. Application of the basic, clinical and socio-behavioral pharmacy sciences to upper respiratory and pulmonary disease.
412. PHARMACOTHERAPY II (3). Pr., PYD 411. Application of the basic, clinical and socio-behavioral pharmacy sciences to cardiovascular disorders.
413. PHARMACOTHERAPY III (3). Pr., PYD 411. Application of the basic, clinical and socio-behavioral pharmacy sciences to end-stage cardiovascular disorders.
414. PHARMACOTHERAPY IV (3). Pr., PYD 411. Application of the basic, clinical and socio-behavioral pharmacy sciences to upper and lower respiratory infections.
415. PHARMACOTHERAPY V (3). Pr., PYD 411. Application of the basic, clinical and socio-behavioral pharmacy sciences to opportunistic infections.
416. PHARMACOTHERAPY VI (3). Pr., PYD 411. Application of the basic, clinical and socio-behavioral pharmacy sciences to gastrointestinal disorders.
417. PHARMACOTHERAPY VII (3). Pr., PYD 411. Application of the basic, clinical and socio-behavioral pharmacy sciences to endocrine disorders.
418. PHARMACOTHERAPY VIII (3). Pr., PYD 411. Application of the basic, clinical and socio-behavioral pharmacy sciences to collagen and pain disorders.
419. PHARMACOTHERAPY IX (3). Pr., PYD 411. Application of the basic, clinical and socio-behavioral pharmacy sciences to sexually-transmitted diseases.
420. PHARMACOTHERAPY X (3). Pr., PYD 411. Application of the basic, clinical and socio-behavioral pharmacy sciences to oncologic disorders.

421. PHARMACOTHERAPY XI (3). Pr., PYD 411. Application of the basic, clinical and socio-behavioral pharmacy sciences to leukemia and other cancers.
422. PHARMACOTHERAPY XII (3). Pr., PYD 411. Application of the basic, clinical and socio-behavioral pharmacy sciences to neurological and psychiatric disorders.
423. PHARMACOTHERAPY XIII (3). Pr., PYD 411. Application of the basic, clinical and socio-behavioral pharmacy sciences to renal disorders.
424. PHARMACOTHERAPY XIV (3). Pr., PYD 411. Application of the basic, clinical and socio-behavioral pharmacy sciences to pediatric disorders.
425. PHARMACOTHERAPY XV (3). Pr., PYD 411. Application of the basic, clinical and socio-behavioral pharmacy sciences to epilepsy, obstetrics and multi-organ disorders.
441. PHARMACY PRACTICE EXPERIENCE III (1). Pr., second-year PYD standing. Continuation of PYD 342. S-U grading.
442. PHARMACY PRACTICE EXPERIENCE IV (1). Pr., PYD 441. Continuation of PYD 441. S-U grading.
443. PHARMACY PRACTICE EXPERIENCE V (1). Pr., PYD 442. Continuation of PYD 442. S-U grading.
444. PHARMACY PRACTICE EXPERIENCE VI (1). Pr., third-year PYD standing. Continuation of PYD 443. S-U grading.
445. PHARMACY PRACTICE EXPERIENCE VII (1). Pr., PYD 444. Continuation of PYD 444. S-U grading.
446. PHARMACY PRACTICE EXPERIENCE VIII (1). Pr., PYD 445. Continuation of PYD 445. S-U grading.

Pharmacy Practice, Clinical (PC)

Professors Smith, *Head*, Evans and Beck

Associate Professors Campagna, Janer, Malloy, Reinke and Tanja

Assistant Professors Byrd, Holland, Palmgren, Smith, Thomas and Wadibia

Adjunct Professor Boosinger

Adjunct Assistant Professor Lenz

Affiliate Associate Professors Anderson, Breland, Davis, Dekich, Disken, Erath, A. Graves, E. Graves, Ingram, Knight, Liss, Panus, Ramsey, Williams and Willis

Affiliate Assistant Professors Alford, Beasley, Blakely, Burnett, Campbell, Collette, Cawood, Copland, Cramer, Darlington, Darsey, Dawson, Duran, Duty, Franks, Ginn, Glisson, Griffies, Hartenstein, Hullelt, Lee, Lowe, Malone, Martin, Mayhew, McKnight, Moore, Norwood, Parker, Real-Ray, Rogers, Rutan, Sanders, Shawyer, Stevenson, Thomas, Turner, Walton, Wang, Weeks, Wix-Eure, Wrightman and Young

Affiliate Instructors Aaron, Allen, Allred, Andrews, Aycok, Ball, Barbaree, Barr, Batt, Beasley, Bertella, Berger, Bishop, Blakely, Bonelli, Bowen, Boyd, Brooklere, Brown, Burden, Calhoun, Chambliss, Clanton, Clark, Coffey, Coker, Colley, Cox, Dalton, Darnell, Davis, Deloach, Durant, Easter, Fox, Fricks, Fuller, Geier, Gibson, Godfrey, Grooms, Gunnels, Hamby, Hamilton, Hession, Hinkle, Holley, Hurley, Johnson, Jones, Keeton, Killian, Kimmons, Kittrell, Knowlton, Lawrence, Layne, Lewis, Long, B. Main, T. Main, Markham, Maryanow, Mayhew, McClanahan, McKnight, Miller, Minard, Napp, Nelms, Newman, Norwood, D. Nowlin, T. Nowlin, Osborne, Owen, Patterson, Prickett, J. Redden, S. Redden, Rudell, Scarbrough, Scott, Seale, Simmons, Slay, Smith, Spear, Spina, Spradling, Stamitoles, Stephenson, Street, Stribling, Styron, Templeton, C. Thomas, J. Thomas, M. Thomas, Turner, Vinson, Whitmer, C. Wilson, R. Wilson, Windle, Woodward, Worthington, Wrenn and Zorn

347. HUMAN PATHOLOGY (5). LEC. 5. Pr., ZY 561, CH 519. General mechanisms and language of disease. Emphasis on pathogenesis of disease to include an understanding of the dynamic nature of disease.
348. PHARMACEUTICAL TERMINOLOGY (2). LEC. 2. Pr., first professional year standing. Common terms and abbreviations used in the professional and scientific aspects of pharmacy and medicine.
350. PATIENT/PHYSICAL ASSESSMENT I (1). Pr., first-year PYD standing. Performing a basic physical assessment and obtaining a medical and medication history. S-U grading only.
446. THERAPEUTICS I (4). LEC. 4. Pr., PC 347. Coreq., PY 401, 420, 531. Selected diseases and the assessment of therapeutic and adverse responses to pharmacologic agents of choice.
447. THERAPEUTICS II (4). LEC. 4. Pr., PC 446. Coreq., PY 421, 532. Continuation of PC 446.
448. THERAPEUTICS III (4). LEC. 4. Pr., PC 447. Coreq., PY 422, 533. Continuation of PC 447.
450. SELF CARE AND NONPRESCRIPTION MEDICATIONS (3). LEC. 3. Pr., PC 448, PY 422, 533. Introduction to the triage function of the pharmacist with the focus on nonprescription medications, self-diagnostics and self monitoring devices.
451. PATIENT/PHYSICAL ASSESSMENT II (3). Pr., second-year PYD standing. Advanced physical assessment and interpretation of findings.
452. DRUG-INDUCED DISEASE/DRUG INTERACTIONS (4). Pr., PC 448 or PY 452, PC 451. Patient evaluation in drug-induced disease and polypharmacy.
453. PROFESSIONAL PRACTICE (3). LEC. 1, LAB. 6. Pr., 3rd prof. year standing and departmental approval. Placement of students in various pharmacy practice environments to increase knowledge of practice options.

454. CARDIOPULMONARY LIFE SUPPORT (1). Pr., PC 448. The techniques used to administer basic life support to adults, children and infants. The devices and drug therapy used in advanced cardiac life support.
455. VENEREAL DISEASE EDUCATION AND CONTRACEPTION (1). Pr., PC 448. The epidemiology, modes of transmission, prevention, diagnosis and treatment of venereal diseases. The proper use, effectiveness, adverse effects and contraindications of contraceptive methods.
456. DRUG ABUSE/POISON PREVENTION EDUCATION (1). Pr., PC 448. Drugs and chemical substances used for non-therapeutic purposes and specific treatment modalities for intoxications.
457. DRUG INTERACTIONS (3). LEC. 3. Pr., PC 448, PY 422, 533. Mechanisms of drug interactions with other drugs, foods, endogenous materials and modifications of laboratory tests due to drugs.
458. INSTITUTIONAL PRACTICE EXTERNSHIP (8). LAB. 40. Pr., PC 448, PY 403, 422, 533, PCS 471. A structured practicum in an institutional setting of five weeks (200 hours) duration.
459. COMMUNITY PRACTICE EXTERNSHIP (8). LAB. 40. Pr., PC 448, PY 403, 422, 533, PCS 471. A structured practicum in a community pharmacy setting of five weeks (200 hours) duration.
460. CLERKSHIP-CLINICAL PRACTICE (8). LAB. 40. Pr., PC 448, PY 403, 422, 533, PCS 471. A clinical rotation of five weeks (200 hours). Students participate in patient care activities that teach skills necessary for solving therapeutic problems and evaluating drug therapy.
461. CLERKSHIP-SPECIALTY ELECTIVE (8). LAB. 40. Pr., PC 448, PY 403, 422, 533, PCS 471. A five-week (200 hours) professional practice experience approved by the department.
465. ADVANCED PRACTICE EXPERIENCE: GENERAL MEDICINE (8). Pr., fourth-year PYD standing. Rational pharmacotherapeutics and patient assessment. Achievement of the program's outcome-based abilities emphasized.
466. ADVANCED PRACTICE EXPERIENCE: AMBULATORY CARE (8). Pr., fourth-year PYD standing. Rational pharmacotherapeutics and patient assessment. Achievement of the program's outcome-based abilities emphasized.
467. ADVANCED PRACTICE EXPERIENCE: ADVANCED PHARMACEUTICAL CARE (8). Pr., fourth-year PYD standing. Rational pharmacotherapeutics and patient assessment. Achievement of the program's outcome-based abilities emphasized.
468. ADVANCED PRACTICE EXPERIENCE: ELECTIVES (8). Pr., fourth-year PYD standing. Rational pharmacotherapeutics and patient assessment. Achievement of the program's outcome-based abilities emphasized.
495. SPECIAL PROBLEMS (1-3). Pr., departmental approval. Individualized investigation of clinical pharmacy problems as related to the delivery of health care services.
- 502-503. RESEARCH METHODS I-II (3-3). Pr., PCS 469. Assessment and interpretation of research design in pharmacy/medical literature.
- 504-505. DRUG INFORMATION RETRIEVAL AND ANALYSIS I-II (2-2). Pr., PCS 469. Computer-assisted drug information retrieval, analysis and communication.
- 510-511-512. ADVANCED THERAPEUTICS I-II-III (6-6-6). Pr., PC 448. Pathophysiology, physical assessment and pharmacotherapy of the common disease states.
521. APPLIED PHARMACOKINETICS (4). Pr., PY 502. Formulation of a consultation for patient cases in which pharmacokinetic principles apply.
530. ADVANCED PATIENT MONITORING I (3). LEC. 1, LAB. 6. Pr., admission to Doctor of Pharmacy program. Evaluation of patient data, identification of drug therapy-related problems and development of therapeutic plan.
- 531-532. ADVANCED PATIENT MONITORING II-III (1-1). Pr., PC 530. Continuation of PC 530 with an experiential component.
542. CLINICAL SEMINAR (2). Pr., admission to Doctor of Pharmacy program. Coreq., clerkship sequence. Student seminars on topics in drug therapy.
- 550-571. CLERKSHIP (INCLUSIVE) (9). Pr., admission to Doctor of Pharmacy program, required course work. Clinical rotation of five weeks (200 hours). Rational pharmacotherapeutics and patient assessment. Verbal and written communication skills emphasized.

The clerkship titles are:

550. CLERKSHIP — DRUG INFORMATION
551. CLERKSHIP — CLINICAL PHARMACOKINETICS
552. CLERKSHIP — RESEARCH
553. CLERKSHIP — AMBULATORY CARE
554. CLERKSHIP — GENERAL INTERNAL MEDICINE
555. CLERKSHIP — PULMONARY MEDICINE
556. CLERKSHIP — ONCOLOGY/HEMATOLOGY
557. CLERKSHIP — NEPHROLOGY
558. CLERKSHIP — CARDIOLOGY
559. CLERKSHIP — CLINICAL PHARMACY ADMINISTRATION
560. CLERKSHIP — CRITICAL CARE
561. CLERKSHIP — DRUG USE EVALUATION
562. CLERKSHIP — GERIATRICS
563. CLERKSHIP — NUTRITION

- 564. CLERKSHIP — INFECTIOUS DISEASES
- 565. CLERKSHIP — SURGERY
- 566. CLERKSHIP — NEONATOLOGY
- 567. CLERKSHIP — MEDICINE SPECIALTY
- 568. CLERKSHIP — ELECTIVE AREA
- 569. CLERKSHIP — PEDIATRICS
- 570. CLERKSHIP — RURAL HEALTH CARE
- 571. CLERKSHIP — FAMILY PRACTICE

Philosophy (PA)

Professors Davis, Machan and Perry

Associate Professors Brown, Head, Elfstrom and White

Assistant Professors Jolley, Walters, Watkins and Wojcik

Instructors Causey, Epperson, Evans and Ryan

- 101. INTRODUCTION TO LOGIC (5). Basic logical principles and applications: definition and classifications, informal fallacies, categorical logic, elementary propositional logic, analogy and selected inductive inferences.
- 102. INTRODUCTION TO ETHICS (5). The basic concepts, types and schools of moral theory, and illustrates how these may be applied to contemporary moral problems.
- 110. INTRODUCTION TO PHILOSOPHY (5). The methods of philosophical inquiry and an examination of selected philosophical topics. Credit cannot be given for both PA 110 and 210.
- 201. DEDUCTIVE LOGIC (5). Argument structure, symbolic notation and translation, formal proofs and invalidations in propositional logic and in first order predicate logic.
- 218. ETHICS AND THE HEALTH SCIENCES (5). Topics such as contraception, abortion, and eugenics; human experimentation; truth in drugs and medicine; death and dying; and other health related issues in order to clarify relevant ethical considerations and to provide philosophical bases for decisions on right and wrong, good and bad, rights and responsibilities.
- 219. BUSINESS ETHICS (5). Covers normative issues associated with commerce such as advertising, management and business abroad.
- 220. HONORS LOGIC (5). Informal fallacies; term and syllogistic logic, elementary propositional logic.
- 221. HONORS PHILOSOPHY (3). Philosophical methods and their applications to problems in epistemology and metaphysics.
- 222. HONORS ETHICS (5). Major ethical theories from the history of philosophy: their foundations in epistemology and metaphysics and their extension into social thought.
- 305. AESTHETICS (5). Examines modern and contemporary theories of the nature of art.
- 311. SYMBOLIC LOGIC (5). Pr., PA 211 or departmental approval. Propositional logic and predicate logic through relations; natural language and logic; some philosophical problems in logic.
- 316. PHILOSOPHIES OF HUMAN NATURE (5). An historical survey of major theories of human nature. Credit cannot be given for both PA 216 and 316.
- 330. PHILOSOPHY OF RELIGION (5). Examines the nature of religion, religious language, religious knowledge, religious theories of humanity and evil and examines arguments for the existence of God and the immortality of the soul.
- 333. HISTORY OF PHILOSOPHY I. ANCIENT AND EARLY MEDIEVAL (5). Surveys of philosophic thought from the Pre-Socratics through Aquinas, emphasizing Plato and Aristotle.
- 334. HISTORY OF PHILOSOPHY II. LATE MEDIEVAL AND EARLY MODERN PHILOSOPHY (5). Surveys philosophic thought from Occam to Kant emphasizing major thinkers.
- 335. HISTORY OF PHILOSOPHY III. RECENT AND CONTEMPORARY PHILOSOPHY (5). Surveys various representatives of the major philosophical trends during these periods.
- 340. MEDIEVAL PHILOSOPHY (5). Survey of philosophical thought from late antiquity through the Middle Ages. Emphasis on Plotinus, Islamic thinkers, Augustine, Abelard, Anselm and Thomas Aquinas.
- 355. SPECIAL TOPICS (5). Topics vary. May be repeated once in a second topic.
- 360. POLITICAL PHILOSOPHY (5). Combines a historical and analytical approach. The political thought of both classical and contemporary thinkers, including Plato, Aristotle, Machiavelli, Hobbes, Locke, Mill, Spencer, Marx, Rawls and Nozick will comprise the chief focus of the course, together with such concepts as sovereignty, natural law, liberty, equality and order.
- 380. PRAGMATISM (5). Emphasis on Peirce, James, and Dewey. Some philosophical issues examined from a pragmatic viewpoint.
- 401. PHILOSOPHICAL FOUNDATIONS OF COMMUNISM (5). Pr., junior standing. Examines the thought of Marx-Engels and its development in Kautsky, Bernstein, Lenin.
- 402. EXISTENTIALISM (5). Pr., junior standing. Selected works of such authors as Kierkegaard, Nietzsche, Sartre, Jaspers, and Heidegger.
- 425. PHILOSOPHY OF MIND (5). Pr., junior standing. Examines classical and modern texts on the phenomenology of consciousness and mind-body problems.

Physical Science

432. **PROCESS PHILOSOPHY (5).** Pr., junior standing. An examination of selected writings of Bergson, James and Whitehead.
440. **CONTEMPORARY MARXISM (5).** Pr., junior standing. Examines the thought of Lukacs, Stalin, Merleau-Ponty, Sartre, Habermas, Marcuse and others.
455. **METAPHYSICS (5).** Pr., junior standing. A critical analysis of such topics as monism and pluralism, freedom and determinism, realism and nominalism and the mind-body problem.
460. **EPISTEMOLOGY (5).** Pr., junior standing. The origin, nature, kinds, and validity of knowledge, with a consideration of faith, intuition, belief, opinion, certainty and probability.
470. **PLATO (5).** Pr., junior standing. Examines such topics as Plato's Methodology, epistemology, metaphysics, ethics, political theory.
475. **ARISTOTLE (5).** Pr., junior standing. Examines Aristotle's logic, epistemology, metaphysics, ethics, political theory, psychology.
482. **BRITISH EMPIRICISM (5).** Pr., junior standing. Examines 17th- and 18th-century empiricism emphasizing Locke, Berkeley, Hume.
484. **CONTINENTAL RATIONALISM (5).** Pr., junior standing. Examines major themes in such thinkers as Descartes, Spinoza, Leibniz, Gassendi.
492. **PHILOSOPHY OF LAW (5).** The nature and function of law including such topics as judicial reasoning, the ground of authority, natural law, legal responsibility, punishment, civil disobedience, and the relation of law to ethics and the behavioral sciences.
495. **READINGS IN PHILOSOPHY (1-10).** Pr., junior standing, a 3.25 average in relevant prior work either in philosophy or in related areas and consent of department head and instructor. Specific reading programs may be developed which pertain to a particular philosopher, period or problem. A paper and an examination will be expected. May be repeated for credit.
497. **READING FOR HONORS IN PHILOSOPHY (3-6).**
499. **HONORS THESIS (3-6).** Repeatable once for a maximum of six hours credit. Senior thesis for students in the University Honors Program.

ADVANCED UNDERGRADUATE AND GRADUATE

504. **MODERN ETHICAL THEORIES (5).** Recent analyses of the meanings, presuppositions, and problems of ethical terms and judgments.
513. **PHENOMENOLOGY (5).** The phenomenological method and its application in the works of William James, Husserl, Heidegger, Sartre and Merleau-Ponty.
515. **PHILOSOPHY OF SCIENCE (5).** Such topics as empirical meaning, verifiability, measurement, probability, causality and determinism.
580. **ANALYTIC PHILOSOPHY (5).** Philosophical analysis in the 20th century from G. E. Moore through the Oxford analysis.
650. **SEMINAR (1-10).** Pr., departmental approval. The content will change for each quarter in any one calendar year. This will vary from movements of thought to an intensive study of one of the great thinkers such as Plato or Whitehead. May be repeated for credit.

COURSE FOR GRADUATE STUDENTS

650. **SEMINAR (1-10).** Pr., departmental approval. May be repeated for credit. The content will change for each quarter in any one calendar year. This will vary from movements of thought to an intensive study of one of the great thinkers such as Plato or Whitehead.

Physical Science (PHS)

Associate Professor Simon

ADVANCED UNDERGRADUATE AND GRADUATE

530. **MODERN CONCEPTS IN PHYSICAL SCIENCE I (5).** LEC. 4, LAB. 3. Pr., PHS 101 or PS 206 or departmental approval, junior standing. General physical science based on IPS materials to acquaint the student with the IPS approach. Not available to graduate students in the areas of science or mathematics.
531. **MODERN CONCEPTS IN PHYSICAL SCIENCE II (5).** LEC. 4, LAB. 3. Pr., PHS 101 or PS 206 or departmental approval, junior standing. A survey of physics topics using PSSC and Project Physics materials to acquaint the students with these approaches to high school physics. Not available to graduate students in the areas of science or mathematics.
532. **NUCLEAR SCIENCE FOR TEACHERS (5).** LEC. 4, LAB. 3. Pr., a course in general physics and preferably one in chemistry plus junior standing, junior or senior high school teacher, or departmental approval. Fundamentals of atomic and nuclear structure for junior and senior high school teachers, including radioactivity and nuclear radiation, radiation detection, radiological safety, nuclear fission and fusion, nuclear power reactors and power generation, advantages and hazards of nuclear power reactors. Not available to graduate students in the areas of science or mathematics.

Physics (PS)

Professors Perez, Head, ChenClothiaux, Fromhold, Gandy, Hinata, Oks,
Swanson and Williams

Walter Professor Barnes

Alumni Professor Pindzola

Associate Professors Bozack, Hanson, Fukai, Knowlton, Simon, Tin and Wersinger

Assistant Professors Lin, Robicheaux and Watts

Affiliate Professors Beiersdorfer and Moore

170. HONORS PHYSICS I (4). Coreq., PS 170L and MH 191. Classical mechanics using calculus: Galilean Kinematics, Newtonian Dynamics for single particles and rigid bodies, conservation laws in mechanics, gravitation.
- 170L. HONORS PHYSICS I LAB (1). Coreq., PS 170, MH 191. Labs paralleling the PS 170 class.
171. HONORS PHYSICS II (4). Pr., PS 170, PS 170L. Coreq., PS 171L. MH 192. Waves and oscillations, fluid dynamics, thermodynamics, geometrical and physical optics.
- 171L. HONORS PHYSICS II LAB (1). Pr., PS 170, 170L. Coreq., PS 171, MH 192. Lab paralleling PS 171.
172. HONORS PHYSICS III (4). Pr., PS 171, 171L. Coreq., PS 172L, MH 193. Electricity and magnetism.
- 172L. HONORS PHYSICS III LAB (1). Pr., PS 171, 171L. Coreq., PS 172, MH 193. Lab paralleling PS 172.
200. FOUNDATIONS OF PHYSICS (5). LEC. 4, LAB. 3. The principles of mechanics, heat, light, sound, electricity, magnetism and topics from modern physics. Credit in PS 205 or 220 precludes credit for this course. Not available to graduate students in the areas of science or mathematics.
- 205-206-207. INTRODUCTORY PHYSICS I, II, III (4-4-3). LEC. 4. Pr., for PS 205, MH 160; for PS 206, PS 205; for PS 207, PS 206. Coreq., for PS 205, PS 205L; for PS 206, PS 206L. Three-quarter sequence covering mechanics, fluids, heat, wave motion, sound, electricity, magnetism, light, relativity, atomic and nuclear phenomena and radiation. Quantitative and qualitative aspects are stressed utilizing algebra and trigonometry. Credit for the PS 220-221-222 sequence precludes credit for the 205-206-207 sequence.
- 205L-206L-207L. INTRODUCTORY PHYSICS LABORATORY I, II, III (1-1-1). LAB. 3. Coreq., for PS 205L, 205; for PS 206L, PS 206. Selected lab experiments paralleling topics in PS 205-206-207 respectively.
215. ASTRONOMY (5). LEC. 4, LAB. 3. Open to non-science majors. Earth and the solar system; the stars; theories of stellar evolution, neutron stars, black holes, supernova, galaxies and the expanding universe; modern cosmological theories. The laboratory emphasizes studies with the telescope.
220. GENERAL PHYSICS I (3). LEC. 3. Coreq., MH 163, PS 220L. Mechanics using calculus. Three-quarter sequence PS 220-221-222 serves as a foundation for students enrolled in science and engineering programs. Qualified engineering and honors students and physics majors are encouraged to enroll in PS 170.
- 220L. GENERAL PHYSICS LABORATORY I (1). LAB. 3. Coreq., PS 220. Lab experiments paralleling topics covered in PS 220.
221. GENERAL PHYSICS II (3). LEC. 3. Pr., PS 220, 220L. Coreq. PS 221L. MH 264. Continuation of PS 220 including heat, light and sound. Qualified engineering and honors students and physics majors are encouraged to enroll in PS 171.
- 221L. GENERAL PHYSICS II (1). LAB. 3. Coreq., PS 221. Lab experiments paralleling topics covered in PS 221.
222. GENERAL PHYSICS III (3). LEC. 3. Pr., PS 220, Coreq., PS 221L. A continuation of PS 221 including gravity, electricity and magnetism. Qualified engineering and honors students and physics majors are encouraged to enroll in PS 172.
- 222L. GENERAL PHYSICS LABORATORY III (1). LAB. 3. Coreq., PS 222. Selected lab experiments paralleling topics covered in PS 222.
302. ELECTRONICS (5). LEC. 4, LAB. 3. Pr., PS 222, MH 269. Review of AC and DC circuits; theory of vacuum tubes and semiconductors; diodes as rectifiers and regulators; tube and transistor voltage and power amplifiers; feedback amplifiers and oscillators; pulse and digital circuits. Appropriate laboratory exercises.
303. OPTICS (4). Pr., PS 301 or EE 392, MH 501, junior standing. Intermediate course in physical optics comprising wave motion, reflection, refraction, dispersion, origin of spectra, interference, diffraction and polarization.
306. PHYSICS LABORATORY (2). LAB. 6. Pr., PS 300, 305. Selected laboratory experiments from fields of electricity, magnetism and modern physics.
310. MECHANICS I (5). Pr., MH 337. Newtonian mechanics, linear oscillations, non-linear oscillation introduction to calculus of variations.
311. MECHANICS II (5). Pr., PS 310. Hamilton's principle and Lagrange's equations, central force motion, collisions, non-inertial frames, rigid body dynamics, vibrating systems.
320. MODERN PHYSICS FOR ENGINEERS (3). LEC. 3. Pr., PS 222, MH 264. Introduction to modern physics, including special relativity, Schrodinger wave mechanics, atomic and nuclear systems, elementary particles. Credit in PS 207 or 305 precludes credit in this course.
- 320L. MODERN PHYSICS FOR ENGINEERS LAB (1). Coreq., PS 320. Lab paralleling PS 320.
412. SEMINAR IN MODERN PHYSICS (1). Library search, written reports, and oral presentation of a pertinent topic in modern or current physics. May be repeated for credit.
470. HONORS THESIS (3-6). Pr., senior standing in the honors program. May be repeated once for maximum of six hours credit.

Physics

491. UNDERGRADUATE RESEARCH (3-5). LAB. 9-15. Pr., departmental approval and senior standing. Student will work under the direction of a staff member on a problem of mutual interest. May be repeated for a maximum of 15 credit hours.

ADVANCED UNDERGRADUATE AND GRADUATE

504. STATISTICAL THERMODYNAMICS (5). Pr., PS 516 or concurrently, senior standing. Temperature, entropy and chemical potential are developed from the principles of equilibrium quantum states. The Gibbs representation is introduced and applied to the development of equilibrium distribution functions. Quantum statistics is developed and applied to problems.
- 506-507. EXPERIMENTAL PHYSICS I, II (2-2). LAB. 6-6. Pr., PS 301, 302. Coreq. PS 303. Selected experiments from areas of modern physics, optics, nuclear physics, plasmas and solid state physics.
- 510-511. ELECTRICITY AND MAGNETISM I, II (4-4). Pr., for PS 510, PS 222, MH 269; for PS 511, PS 510. Electrostatics, study of fields in dielectrics, magnetic forces and their effects, electric and magnetic properties of matter, Maxwell's equations, electromagnetic waves and radiation.
- 515-516. INTERMEDIATE MODERN PHYSICS I, II (5-5). Pr., MH 269, PS 305 or 320. Special theory of relativity; introductory quantum mechanics with applications to microscopic systems; Fermi-Dirac, Bose-Einstein statistics; and electronic bands in solids.
520. NUCLEAR PHYSICS AND ELEMENTARY PARTICLES (5). Pr., PS 516. Radioactivity; nuclear radiation; nuclear forces, structure of nucleus, nuclear reactions, accelerators and reactors. A treatment of elementary particles including conservation laws, symmetry principles, decay modes and classification.
521. MODERN ELECTRONICS (5). LEC. 3, LAB. 6. Pr., PS 302. Network theory and digital logic; state-of-the-art electronic devices; operational amplifiers; linear and digital integrated circuits; servo systems; topics in modern instrumentation.
- 531-532-533. METHODS OF THEORETICAL PHYSICS I, II, III (3-3-3). Pr., MH 362. Theoretical methods used in classical and quantum physics, including applications of transformations, special functions, Green's functions, variation and perturbation theory, tensor and group theory.
535. INTRODUCTION TO SOLID STATE PHYSICS (5). Pr., PS 516, MH 264 or departmental approval. Solid state phenomena including lattice vibrations, band description of electronic states in metals, semiconductors and insulators, and magnetic phenomena.
545. PLASMA PHYSICS (4). Pr., PS 511, departmental approval or senior standing. Collision phenomena in gases, creation of ionized gases (plasmas), interaction of plasmas and fields, plasma heating, instabilities, radiation and applications.
575. COMPUTER SIMULATION OF PHYSICAL SYSTEMS (3). Pr., MH 265 or 269, PS 220-221-222 or 205-206-207 and some proficiency in PASCAL, C, MODULA-2, BASIC or FORTRAN. Employment of computer simulation techniques in realistic applications of physics.
590. SPECIAL TOPICS IN ADVANCED PHYSICS (1-5). Pr., departmental approval. Topics will vary as needed. May be taken for credit more than once.

COURSES FOR GRADUATE STUDENTS

- 601-602-603. ADVANCED DYNAMICS I-II-III (3-3-3). Pr., PS 502. D'Alembert's principle; introduction to the calculus of variations; Hamilton's principle and Hamilton's equations; principle of least action. Canonical variables and contact transformations; the Hamilton-Jacobi equation; action angle variables; Poisson brackets; continuous systems.
- 604-605-606. THEORY OF ELECTRICITY AND MAGNETISM I-II-III (3-3-3). Pr., PS 301 or EE 391. Maxwell's equations, electrostatics, magnetostatics, boundary value problems for Laplace and Poisson equations. Green's functions, electromagnetic waves, guided waves, emission and scattering of waves by current and charge density fluctuations, diffraction theory, special relativity, radiation from relativistic charged particles.
620. MODERN PHYSICS FOR HIGH SCHOOL TEACHERS (5). LEC. 4, LAB. 3. Pr., MH 587 or equivalent. Physics since 1890, including structure of matter; atomic and molecular spectra; X-rays, natural and induced radioactivity; nuclear fission and fusion; and cosmic rays.
- 628-629-630. STATISTICAL MECHANICS I, II, III (3-3-3). Pr., PS 502, 504. Theory and applications of equilibrium statistical mechanics; relation of statistical mechanics to thermodynamics. Statistical mechanics of quantum mechanical systems. Introduction to non-equilibrium statistical mechanics. Boltzmann transport equation. Fluctuations and dissipation.
632. RELATIVITY: THE SPECIAL THEORY (3). Pr., Graduate standing. Historical introduction; spacetime diagrams; Minkowski, Brehme, Loedel; tensors in flat spaces; relativistic mechanics, continuous media, electromagnetism; gravitation; spinners and wave equations.
639. DIRECTED READING IN PHYSICS (CREDIT TO BE ARRANGED.) Pr., departmental approval. May be repeated for credit.
- 641-642-643. QUANTUM MECHANICS I-II-III (3-3-3). Pr., PS 641, 502; for 642, 631; and for 643, 642. Duality of particles and waves; uncertainty principles; wave functions and Schrodinger's equation; one-dimensional states; operator and matrix formalism; bound states problems; angular momentum; stationary and time-dependent perturbation theory; spin and identical particles; scattering theory; atoms, molecules and solids; interaction of radiation with matter.
653. SEMINAR IN PHYSICS (CREDIT TO BE ARRANGED, 1-5). Pr., departmental approval. May be repeated for credit.
655. SPECIAL TOPICS IN PHYSICS (3) Pr., departmental approval. Topics such as atomic and molecular structure; fluid mechanics; experimental methods of material characterization, etc. May be repeated for credit.

695. COLLOQUIUM (1). Offers a series of talks presented by invited speakers on broad fields of physics. May be repeated. S-U grading.
699. RESEARCH AND THESIS (CREDIT TO BE ARRANGED.)
701. ATOMIC STRUCTURE THEORY (3). Pr., PS 643. One electron atoms, vector model for complex atoms, $3n-j$ symbols, Hartree-Fock equations, tensor operators, configuration-interaction.
702. ATOMIC COLLISION THEORY (3). Pr., PS 643. Potential scattering, resonance phenomena, continuum Hartree-Fock, S-matrix, quantum defects, distorted-wave and close-coupling methods.
710. PLASMA FLUID THEORY (3). Pr., PS 545. Two-fluid and one-fluid descriptions of plasma behavior, magnetohydrodynamics; applications to space plasma phenomena and magnetically-confined plasmas for nuclear fusion research.
711. PLASMA KINETIC THEORY (3). Pr., PS 545. Statistical equations of a plasma, Klimintovich equation, BBGKY hierarchy, distribution functions, Boltzman H theorem, the Vlasov description of a plasma, quasi-linear theory, kinetic plasma instabilities, Landau damping of plasma waves.
712. PLASMA WAVES (3). Pr., PS 545. Linear theory of electromagnetic and electrostatic wave propagation in cold and warm magnetized plasmas in all frequency regimes, wave propagation in non-uniform and bounded plasmas, plasma instabilities.
713. PRINCIPLES OF PLASMA DIAGNOSTICS (3). Pr., PS 545. The basic physics of various plasma diagnostics covering measurements of plasma temperature and density, measurements of electric and magnetic fields.
714. PLASMA SPECTROSCOPY (3). Pr., PS 606, 642 or departmental approval. Classical and quantum radiation theory, line oscillator strength, line-broadening, equilibrium relations, temperature and density measurements.
715. PHYSICS OF SPACE PLASMAS (3). Pr., PS 545 or departmental approval. An introduction to the unique plasma physics and phenomenology of planetary magnetospheres; electrodynamics of the solar wind and its interaction with the terrestrial plasma, magnetospheric convection, magnetic reconnection, auroral physics, boundary layers.
735. LATTICE STRUCTURE AND DYNAMICS (3) Pr., PS 535, PS 641-3 or departmental approval. Crystal structure and motion of atoms in crystals and their effects on the structural, elastic, optical and thermal properties of solids. Topics to include: the reciprocal lattice, crystal binding, lattice vibrations, Einstein and Debye specific heats, density of phonon states, phonon dispersion relationships, thermal transport.
736. ELECTRON DYNAMICS IN SOLIDS (3) Pr., PS 535, PS 641-3 or departmental approval. Electronic states and motion of electrons in crystals and their effects on the electrical transport, optical and magnetic properties of solids.
737. SEMICONDUCTOR PHYSICS (3) Pr., PS 535, PS 641-3 or departmental approval. Physics of semiconductor materials and devices. Representative topics: Semiconductor statistics, carrier concentrations, intrinsic and extrinsic semiconductors, impurity states, cyclotron resonance, Hall effect, band structure of semiconductors, optical absorption, photoconductivity, p-n junctions, heterojunctions, quantum size effects, transistors, semiconductor lasers.
738. EPITAXIAL GROWTH OF SEMICONDUCTORS (3). Pr., PS 535, PS 641-3 or departmental approval. The physics and chemistry of epitaxial growth of elemental and compound semiconductors. Topics covered will include thermodynamics and kinetics of the growth process for liquid and vapor phase epitaxy and molecular beam epitaxy.
739. SURFACE PHYSICS (3). Pr., PS 535, PS 641-3 or departmental approval. Structure, thermodynamics and electronic properties of surfaces with emphasis on the interaction of gases with surfaces.
740. CHARGED PARTICLE TRANSPORT IN SOLIDS LEADING TO THE OXIDATION OF METALS & SEMICONDUCTORS (3). Pr., PS 535, PS 641-3 or departmental approval. The hopping of individual charged particles is used to develop the linear diffusion equation and non-linear high field transport equations. Hopping transport coupled with thermal emission and quantum tunneling of electrons is used to formulate models leading to predict oxide growth rates and built-in fields for domains of growth.
744. QUANTUM ELECTRODYNAMICS (3). Pr., PS 643. Dirac equation, 1-d barrier scattering, 3d central potentials, field theory, Feynmann diagrams, Moller scatter, renormalization.
745. THE STANDARD MODEL (3). Pr., PS 643. Electroweak lagrangian, spontaneous symmetry breaking, muon decay, νe scattering, km matrix, E^+C^- scattering, quantum chromodynamics.
753. SEMINAR IN ADVANCED PHYSICS (CREDIT TO BE ARRANGED.) Pr., 30 hours of course work in advanced physics. May be repeated for credit.
755. SPECIAL TOPICS IN ADVANCED PHYSICS (3). Pr., completion of 30 units of advanced courses in physics. Topics include molecular beam epitaxy, group theory, atomic and molecular physics, astrophysics and elementary particles
791. DIRECTED READING IN CONTEMPORARY PHYSICS (CREDIT TO BE ARRANGED.) Pr., completion of 30 hours of advanced courses in physics. May be repeated for credit.
799. RESEARCH AND DISSERTATION (CREDIT TO BE ARRANGED.)

Plant Pathology (PLP)

Professors Kloepper, *Head*, Backman, Gazaway and Hagan
Distinguished University Professors Morgan-Jones and Rodriguez-Kabana
Associate Professors Bowen and Tuzun
Assistant Professors Murphy, Sikora and Wilson

212. DISEASES OF LANDSCAPE AND NURSERY PLANTS (3). LEC. 2, LAB. 2. Pr., BI 101-102. Broad overview of common diseases of turf, woody ornamentals, floriculture and greenhouse vegetable crops.
215. FOREST PESTS (4). LEC. 3, LAB. 1. Pr., BI 101, 102. Spring. Diseases and pests of forest and shade trees from seedling to maturity. Pest damage to wood products will be discussed. Field trip will emphasize major forest pest problems in Alabama.
309. GENERAL PLANT PATHOLOGY (5). LEC. 4, LAB. 2. Pr., BI 101-102 and junior standing. Winter, Spring. Nature cause and control of plant diseases illustrated by studies of common diseases of field crops, fruits, vegetables, turf and ornamentals.
460. SPECIAL PROBLEMS (1-3). Pr., departmental approval, senior standing. A. Pathology; B. Virology; A student cannot register for more than three hours credit in any one quarter or in any one area.

ADVANCED UNDERGRADUATE AND GRADUATE

505. INTRODUCTORY MYCOLOGY (5). LEC. 3, LAB. 4. Pr., BI 101-102 or equivalent. Fall. A systematic survey of the fungi with emphasis on morphology.
518. PLANT DISEASE DIAGNOSIS (5). LEC. AND LAB. 8. Pr., PLP 309 or departmental approval. Summer. Approaches, techniques and practical experience in the diagnosis of plant diseases.
553. PRINCIPLES OF PLANT DISEASE CONTROL (3). LEC. 2, LAB. 2. Pr., PLP 309 or equivalent. Spring. Plant disease control strategies; exclusion, eradication, resistance, and protection. The role of each of these disease management strategies will be studied in the development of integrated plant disease management program that utilize cultural, biological and chemical controls.

COURSES FOR GRADUATE STUDENTS

616. PLANT-BACTERIAL INTERACTIONS (5). LEC. 3, LAB. 4. Pr., MB 300. Spring, even years. Experimental and theoretical aspects of isolation, identification, pathogenesis, genetics and ecology of plant associated bacteria.
617. PHYTOVIROLOGY (5). LEC. 3, LAB. 4. Pr., BY 309 or 310, MB 542. Winter, even years. Molecular biology, transmission, pathogenicity and control of viruses that infect plants.
625. SPECIAL PROBLEMS. (CREDIT TO BE ARRANGED.) A. Mycology; B. Mycotoxicology; C. Nematology; D. Pathology; E. Virology; F. Clinical Plant Pathology; G. Phytobacteriology; H. Physiological and Molecular Plant Pathology; I. Epidemiology; J. Supervised classroom experience; K. Biological Control.
630. PLANT NEMATOLOGY (5). LEC. 2, LAB. 6. Pr., PLP 309, BI 101 or departmental approval. Winter, odd years. The various roles of nematodes in relation to plant diseases caused by nematodes and other pathogens. Identification of plant nematodes; nature of pathogenicity; principles and practices of control; recent advances in phytonematology.
640. DEPARTMENTAL FORUM (1). Required of all majors, open to all minors. May be taken more than one quarter. Fall, Winter and Spring. Discussion concerning current topics in the various sciences and related fields.
664. EPIDEMIOLOGY OF PLANT PATHOGENS (4). LEC. 3, LAB. 3. Pr., PLP 309 or equivalent. Fall, odd years. Aspects of epidemiology including pathometry, modelling plant diseases, disease progress and yield loss assessment. Quantitative aspects of host-pathogen relationships and pathosystem management will be studied.
699. RESEARCH AND THESIS (CREDIT TO BE ARRANGED.)
719. ADVANCED PLANT PATHOLOGY (5). LEC. 3, LAB. 4. Pr., PLP 309 or equivalent. Fall. Biological significance of etiology, epiphytology and host-parasite relations in plant diseases. Classical and current theory will be considered in relation to concepts and problems in plant pathology.
722. PHYSIOLOGICAL AND MOLECULAR PLANT PATHOLOGY (5). LEC. 3, LAB. 4. Pr., PLP 309, CH 518 or equivalent. Spring, odd years. Comprehensive coverage of physiological and molecular biology of host-plant interactions, including host-plant resistance.
725. SPECIAL PROBLEMS (CREDIT TO BE ARRANGED.) A. Mycology; B. Mycotoxicology; C. Nematology; D. Pathology; E. Virology; F. Clinical Plant Pathology; G. Phytobacteriology; H. Physiological and Molecular Plant Pathology; I. Epidemiology; J. Supervised classroom experience; K. Biological Control.
728. FIELD RESEARCH IN PLANT PATHOLOGY (5). LEC. 2, LAB. 6. Summer, odd years. Field plot design, techniques for applying pesticides, evaluation of all disease development, estimation of yield losses and analysis of data.
740. DEPARTMENTAL FORUM (1). Required of all doctoral students. May be taken more than one quarter. Fall, Winter, Spring. Oral presentation and discussion of research in the field of specialization.
799. RESEARCH AND DISSERTATION (CREDIT TO BE ARRANGED.)

Political Science (PO)

Professors Bernstein, *Chair*, Becker, Clark, Dickson, Gryski, Heilman,
Martin and Montjoy and Zuk

Associate Professors Barrow, Burns, Crystal, Ford, Gadzey, P. Johnson, Slaton,
Spindler and Ward

Assistant Professors Grenell, Kelly, Robinson and Widell

Adjunct Assistant Professor Abbet

Visiting Associate Professor Watson

Instructor Cannon

Visiting Instructor Houston

209. INTRODUCTION TO AMERICAN GOVERNMENT (5). Constitutional principles; federalism; elections and public opinion; legislative, executive and judicial departments; principal functions.
210. AMERICAN STATE AND LOCAL GOVERNMENT (5). State constitutional principles; organization and functions of state government; national-state and state-local relations; special attention to Alabama government.
260. SURVEY OF LAW ENFORCEMENT (5). Pr., sophomore standing. (Same as LE 260.) Introduction to the philosophical and historical backgrounds; agencies and processes; purposes and functions; administration and technical problems; career orientation.
300. POLITICAL SCIENCE RESEARCH METHODS I (5). Introduction to empirical research methods in political science with attention to design and evaluation.
301. POLITICAL SCIENCE RESEARCH METHODS II (5). Pr., PO 300 or departmental approval. Introduction to empirical research methods in political science with attention to data collection, retrieval, transformation and analysis. Each student will engage in a major empirical research project under close supervision by the instructor.
302. INTRODUCTION TO POLITICAL THOUGHT (5). Pr., sophomore standing. Selected major themes in political thought from ancient to modern times.
303. AFRICAN-AMERICAN POLITICAL THOUGHT (5). Theoretical frameworks reflective of the Black experience.
309. INTRODUCTION TO INTERNATIONAL RELATIONS (5). Pr., sophomore standing. International relations, including a consideration of the bases of national power and the rudiments of international politics.
310. INTRODUCTION TO WORLD AFFAIRS (5). Contemporary issues in international politics and in the affairs of selected nations.
312. INTRODUCTION TO COMPARATIVE GOVERNMENT AND POLITICS (5). Pr., sophomore standing. Methods of classifying governments by institutional and developmental characteristics. A review of the forces which create political stability and instability, democracy and dictatorship; contemporary political systems in selected countries will be used for comparison.
314. AMERICAN FOREIGN POLICY (5). Pr., sophomore standing. Analysis of the decision-making process of American foreign policy and of selected current issues of American foreign policy.
315. AMERICAN POLITICAL THOUGHT (5). Pr., sophomore standing. The principal American political philosophers and philosophies and their influence on political institutions.
316. NATIONAL SECURITY AND FOREIGN POLICY (3). Pr., sophomore standing. Introduction to national security aspects of United States foreign policy.
317. SOVIET AND POST-SOVIET FOREIGN POLICY (5). Survey and analysis of Soviet foreign policy from 1917 to the breakup of the USSR in 1991 and development of the foreign policies of Russia and other successor states.
318. LATIN AMERICA AND THE UNITED STATES (3). An analysis of Latin American-United States relations in their political, social and economic aspects.
323. MUNICIPAL GOVERNMENT IN THE UNITED STATES (5). Pr., PO 210 and sophomore standing. Functions of city government, relation of city to state; electorate, party system and popular control; forms of government; administrative organizations; some reference to Alabama.
325. INTRODUCTION TO PUBLIC ADMINISTRATION (5). Pr., sophomore standing. Organization, development, procedures, process, and human factors involved in administration in a political environment.
326. THEORY OF PUBLIC ORGANIZATION (5). Pr., PO 325 and sophomore standing. Structure and function of governmental organizations with an emphasis on theories of administrative hierarchies and evaluation of bureaucracy.
327. POLICY PROCESS (5). Pr., sophomore standing. The formulation and implementation of public policy; the roles of the major governmental institutions in policy making.
328. GOVERNMENT AND THE ECONOMY (5). Pr., PO 325 and sophomore standing. Examination of constitutional and political bases of governmental action; the origin and evolution of policies; relationships between political and economic institutions; and the consequences of governmental action or inaction.
329. THE AMERICAN PRESIDENCY (5). Pr., PO 209, sophomore standing. The President as legislative leader, chief executive, chief diplomat, and commander-in-chief. Political styles and personalities of recent presidents. Presidential decision-making.
330. INTRODUCTION TO PUBLIC LAW (3). Fundamental structures included in the legal process. The role of law in American society and discussion of contemporary controversies destined for legal resolution.

331. THE LEGISLATIVE PROCESS (3). Pr., PO 209 or 210, sophomore standing. Principles, procedures and problems of lawmaking in the U.S.; special attention to Congress and the state legislatures.
332. THE JUDICIAL PROCESS (3). Pr., sophomore standing. The role of the courts; the nature of the jurisprudence; comparative legal systems; the origin of law; and the concept of legality.
333. ADMINISTRATIVE RESPONSIBILITY (3). Pr., PO 325 and sophomore standing. Roles and functions of public administration in a democratic society. Emphasis on bureaucratic ethics.
334. INTRODUCTION TO CONFLICT RESOLUTION (3). A preparation for mediation and conflict management courses.
340. POLITICAL PARTIES AND POLITICS (5). Pr., PO 209, sophomore standing. The nature, organization and operation of political parties in the United States; the suffrage; nominating and electoral processes; importance and nature of interest groups.
341. POLITICAL PARTICIPATION (3). Pr., sophomore standing. Examination and analysis of various forms of political participation and methods of citizen involvement in American politics.
342. POLITICS AND THE MEDIA (5). Influences of the media (broadcast and printed) on political action, the electoral process and popular concepts of political institutions; "use" of the media and its regulation by government.
351. GOVERNMENT AND POLITICS OF WESTERN EUROPE (5). Introduces students to the major political features of Britain, France, Germany and the European Union.
352. MIDDLE EAST POLITICS (5). Political institutions and processes of selected nations in the Middle East and how they are influenced by external political and economic forces.
353. POLITICS IN THE USSR AND SUCCESSOR STATES (5). Survey and analysis of evolving political institutions and domestic policies from 1917 to the breakup of the USSR in 1991, as well as an introduction to emerging political patterns in Russia and the other successor states.
354. GOVERNMENT AND POLITICS IN EASTERN EUROPE (5). Survey and analysis of evolving political institutions and policies in Eastern and Central Europe under Communism and in the post-Communist period.
355. GOVERNMENT AND POLITICS OF LATIN AMERICA (5). The political environment, institutions and processes of Latin America with emphasis on dynamic factors that influence the degree of democracy and authoritarianism, stability and instability and politico/economic development in the area.
361. GOVERNMENT AND POLITICS OF THE FAR EAST (5). The political environment, institutions and processes of the Far East, with emphasis on China and Japan; also foreign relations of the area including Great Power interests.
407. INDEPENDENT STUDY (1-5). Pr., junior standing and departmental approval. Independent study and research, directed by a faculty member.
421. POLITICAL BEHAVIOR (5). Political participation; the development of partisanship and other politically relevant attitudes; the voting behavior of citizens and their representatives. Emphasis on the development and empirical testing of causal modes.
450. INTERNSHIP (5-10). Pr., PO, PUB or HA major and junior standing. (S-U grading only.) Practical political or administrative experience in public agencies or related activities arranged and approved by the department.
451. INTERNSHIP READING COURSE (5). Coreq., concurrent enrollment in PO 450. Departmental approval. Content of reading by agreement of student and instructor. Not open to graduate students.
471. HONORS READINGS COURSE (3-5). Pr., admission to the Auburn University Honors Program or the Political Science Department Honors Program. May be repeated for a maximum of six hours but a student may earn no more than a combined total of nine credit hours in PO 471 and 472. Honors students taking an internship should select this course in lieu of PO 451.
472. HONOR RESEARCH AND THESIS (1-3). Pr., admission to the Auburn University Honors Program or the Political Science Department Honors Program. May be repeated to a maximum of six hours but a student may earn no more than a combined total of nine credit hours in P O 471 and 472.
475. SPECIAL TOPICS IN POLITICAL SCIENCE (3-5). Review of selected political science topics. May be repeated once for credit with change of topic.

ADVANCED UNDERGRADUATE AND GRADUATE

501. AMERICAN CONSTITUTIONAL LAW I (5). The constitution of the United States on the basis of the decisions and opinions of the Supreme Court defining judicial review, the relationship of the executive, legislative and judicial branches of the national government and the federal system.
502. AMERICAN CONSTITUTIONAL LAW II (5). The Constitution of the United States on the basis of the leading decisions and opinions of the Supreme Court defining civil rights in relation to national and state governments.
503. AMERICAN CONSTITUTIONAL LAW III (5). Supreme Court opinions defining voting rights, gender discrimination, race discrimination, age discrimination, affirmative action and the right to privacy.
504. AMERICAN CONSTITUTIONAL LAW IV (5). Supreme Court opinions defining due process in national and state administration of criminal justice and juvenile justice.
505. METROPOLITAN AREA GOVERNMENTAL PROBLEMS (3). Political, governmental, and administrative organization and actions in urban areas with many governmental entities; governmental problems resulting from urbanization and possible solutions. Same as CJ 506.
506. FAMILY LAW (5). Overview of civil and criminal justice issues in family law. Focus on legal principles and their implementation in the contemporary context through utilization of the case study method. Same as CJ 506.

512. COMPARATIVE CRIMINAL JUSTICE SYSTEMS (5). Pr., CJ/PO 260. Institutional comparison, social control problems and policies and functional analysis of the criminal justice systems of selected countries. Same as CJ 512.
514. FINANCIAL ADMINISTRATION (5). Pr., PO 325. Theory and practice of budgeting and the review of government financial documents.
515. PUBLIC PERSONNEL ADMINISTRATION (3). Pr., PO 325. Personnel policies and processes of national, state and local governments. The role of politics in public personnel management.
517. LABOR RELATIONS IN PUBLIC ORGANIZATIONS (3). Pr., PO 515 or MN 442. The background, legal and constitutional aspects and administration of group negotiations and collective bargaining in public employment. Credit for this course precludes credit for MN 517.
518. ADMINISTRATIVE LAW (5). Pr., PO 325 and PO 501 or 502. General nature of administrative law; types of administrative action and enforcement; analysis of rule-making and adjudication; administrative due process; judicial review. Case method.
519. PROBLEMS IN PUBLIC ADMINISTRATION (3-5). Pr., departmental approval, senior or graduate standing. Review of selected problems in public administration through readings, case studies and individual research projects. May be repeated for a maximum of 10 hours.
522. U.S. POLITICAL ECONOMY (5). Discussion of basic political and economic institutions in America and why recent changes in the world economy have created problems for them. Consideration of how political and corporate reforms relate to American competitiveness.
535. CONTEMPORARY INTERNATIONAL POLITICS (5). Survey of the conflicts of national interests in contemporary international politics with emphasis on the efforts to resolve these issues through diplomacy. Gives students the opportunity to apply their training to an analysis of actual contemporary international issues.
552. PROGRAM EVALUATION FOR POLITICAL SCIENTISTS AND PUBLIC ADMINISTRATORS (5). Pr., PO 300 and junior standing. Theory and practice of action program evaluation in the public sector with attention to program planning, process assessment and impact assessment.
561. WOMEN AND POLITICS (5). Examination of the struggle for women to achieve equal rights. Analysis of theoretical, historical, social and political studies to understand the perceptions, perspectives and roles of women in American society.
562. BLACK POLITICS, MASS MOVEMENTS AND LIBERATION THEMES (5). Examines Black political movements which developed in the 1960s and the transformation of the Civil Rights movement to Black nationalism.
566. CONTEMPORARY ISSUES IN COMPARATIVE POLITICS (5). Selected issues in the study of comparative politics. May be repeated once for credit with change of topic.
590. CONFLICT RESOLUTION AND MANAGEMENT (3). Theoretical and comparative perspective on conflict resolution with emphasis on the role of mediation in various societies.

COURSES FOR GRADUATE STUDENTS

600. RESEARCH METHODS (5). Statistics and other quantitative techniques for the analysis of policy and for administrative decision making.
601. RESEARCH DESIGN AND ANALYSIS (5). Development and testing of causal models in political science. Each student will develop and test a complex model under the close supervision of the instructor. Required course.
611. SEMINAR IN AMERICAN POLITICS (5). A systematic survey of the major theories, research and issues in American politics. May be repeated once with change of topic.
613. STATE AND LOCAL POLITICS (5). Explores issues trends and developments in various state and local political settings.
614. FINANCIAL ADMINISTRATION (5). Theory and practice in budgeting, governmental accounting, the review of financial data and the politics of the public budgeting process.
615. PUBLIC PERSONNEL ADMINISTRATION (5). Personnel policies, processes and politics in American governments.
618. ADMINISTRATIVE LAW (5). Analysis of administrative rule-making and adjudication, administrative due process, judicial review of administrative actions.
626. ORGANIZATIONAL THEORY AND ADMINISTRATIVE BEHAVIOR (5). The structure and functioning of government organizations. Includes coverage of research literature.
633. SEMINAR ON ADMINISTRATIVE LEADERSHIP, RESPONSIBILITY AND DEMOCRATIC GOVERNMENT (5). Problems of ethics, democratic theory and leadership as they relate to public administration.
635. SEMINAR IN PUBLIC ADMINISTRATION (5). Various processes, functions, theories, practices and systems as treated in the literature of public administration.
636. SEMINAR IN POLICY AND ADMINISTRATION (5). Formation, execution and evaluation of public policy, plus in-depth analysis of selected policy areas.
638. SEMINAR IN PUBLIC-PRIVATE ADMINISTRATION (5). Pr., PO 635. Theory and practice of the roles of the public and private sectors in the provision, production and delivery of traditional public services.
640. COMPARATIVE PUBLIC ADMINISTRATION (5). Structure and functioning of public administration, including public-private administration, in representative political systems.
645. SEMINAR IN COMPARATIVE POLITICS (5). Surveys the major institutions' processes and issues in comparative politics. May be repeated once with change of topic.

Poultry Science

650. MPA INTERNSHIP (5-10). Administrative experience in a governmental agency or participation in an approved governmental research project. For students without substantial government experience. May be repeated for a maximum of 10 hours.
655. SEMINAR IN INTERNATIONAL RELATIONS (5). Introduces major concepts, research and issues in the field of international politics. May be repeated once with change of topic.
660. MPA RESEARCH PROJECT (5-10). Requires the completion and approval of a paper related to a policy or administrative issue or problem. For students with substantial government experience. May be repeated for a maximum of 10 hours.
665. SEMINAR IN POLITICAL THEORY (5). Introduces the problem of scope and methods of inquiry in the fields of political theory. May be repeated once with change of topic.
675. SEMINAR IN CONSTITUTIONAL LAW (5). Selected areas of constitutional law with readings in-depth in relevant cases and constitutional theory.
680. SPECIALIZED TOPICS SEMINAR (5). Review of selected political science topics. May be repeated once with change of topic.
699. RESEARCH AND THESIS (CREDIT TO BE ARRANGED.)
700. SEMINAR IN PUBLIC ADMINISTRATION (5). Explores the nature of public administration as a field of study and how different theoretical perspectives are reflected in current research.
704. PUBLIC BUDGETING (5). Comprehensive theoretical underpinning for research. Focuses on models associated with descriptive and prescriptive budgeting research.
706. PUBLIC POLICY ANALYSIS AND RESEARCH (5). Examination of advanced policy analysis and research methodology and the relationship between evaluation and quantitative analysis and policy formation and implementation. For doctoral students in public administration only.
707. HUMAN RESOURCE MANAGEMENT: A PUBLIC SECTOR PERSPECTIVE (5). Exploration of advanced concepts of human resource management as it takes place in a public sector setting. Focus is on HRM as it relates to a merit system commonly used in public sector jurisdictions at the national, state and local levels of government.
708. PUBLIC ORGANIZATION THEORY AND MANAGEMENT (5). Analysis of research literature on administrative and organization theory and behavior in public management.
799. RESEARCH AND DISSERTATION (CREDIT TO BE ARRANGED.)

READING COURSES

Directed reading courses enable graduate students to pursue specialized topics. They require permission of the department head or graduate advisor and the supervisory professor. They may be repeated for credit. Normally a reading course in a subject should be taken after the seminar in that subject. Except by special permission, no more than two reading courses may be taken in a master's program.

617. READING COURSE IN AMERICAN GOVERNMENT (3-5).
637. READING COURSE IN PUBLIC ADMINISTRATION (3-5).
647. READING COURSE IN COMPARATIVE GOVERNMENT (3-5).
657. READING COURSE IN INTERNATIONAL RELATIONS (3-5).
667. READING COURSE IN POLITICAL THEORY (3-5).

Poultry Science (PH)

Professors Brewer, *Head*, Bilgili, Eckman, Ewald, Giambone, McDaniel, Moran, Renden and Roland

Associate Professors Blake, Conner and Lien

Assistant Professors Hess, Hinton and Norton

201. POULTRY SCIENCE (4). LEC. 3, LAB. 2. Fall, Spring. Principles of poultry production, including breeding, feeding, housing and diseases.
401. JUNIOR-SENIOR SEMINAR (1). Pr., junior standing. Fall. Experience in analyzing and presenting assigned subjects relative to the poultry industry.
402. POULTRY SCIENCE INTERNSHIP (5-15). Departmental approval, S-U graded. To provide students with practical on-the-job training in the poultry business.
- 407-409. SUPERVISED AVIAN INVESTIGATIONS (3-3). LEC. 1, LAB. 4. Pr., junior standing and departmental approval. Investigation of some phase of avian science of interest to the student.
470. HONORS READINGS AND SPECIAL TOPICS (3-6). Pr., admission to University Honors Program; junior or senior standing. May be repeated for a maximum of six hours. Open only to poultry science students in the Honors Program with the consent of the Honors Program Advisor. Topics of an undergraduate nature pertinent to poultry science.
471. HONORS THESIS (1-6). Pr., admission to University Honors Program; junior or senior standing. May be repeated for a maximum of six hours. Open only to poultry science students in the Honors Program with the consent of the Honors Program Advisor. Directed research and writing of honors thesis.

ADVANCED UNDERGRADUATE AND GRADUATE

503. COMMERCIAL POULTRY PRODUCTION (5). LEC. 4, LAB. 3. Pr., BI 103, MH 160 and CH 203 or departmental approval. Fall. Principles of management of commercial poultry for meat and egg production.
505. POULTRY FEEDING (5). LEC. 4, LAB. 2. Pr., BI 103, MH 160, PH 201 and CH 203 or departmental approval. Fall. Composition and use of poultry feeds in connection with the demands for body growth, body maintenance and egg production.
506. POULTRY BREEDING, FERTILITY AND HATCHABILITY (5). LEC. 4, LAB. 2. Pr., BI 103, MH 160, PH 201, CH 203 and ZY 300 or departmental approval. Spring. Breeding systems used in developing modern breeds of poultry. Genetic and environmental factors affecting fertility, embryonic development and hatchability.
508. CONTROL OF POULTRY DISEASES AND PARASITES (4). LEC. 3, LAB. 2. Pr., BI 103, MH 160 and CH 203 or departmental approval. Spring. Prevention, diagnosis, control and treatment of the common diseases of poultry.
511. PROCESSING AND MARKETING (4). LEC. 3, LAB. 2. Pr., PH 503 or departmental approval. Winter. Problems involved in processing and marketing poultry meat and eggs.
515. AVIAN REPRODUCTION AND ENVIRONMENTAL PHYSIOLOGY (4). LEC. 4. Pr., MH 160, CH 203 and ZY 251 or 316 or departmental approval. Winter. Reproductive processes and physiological responses to environmental stimuli in domestic poultry.
516. PRINCIPLES OF POULTRY AND MEAT PRODUCT SAFETY (4). LEC. 3, LAB. 3. Pr., BI 103, MH 160, CH 203 and MB 300 or departmental approval. Spring. Identification and control of potential microbiological and toxicological hazards associated with foods of animal origin.
593. PRACTICUM (1-5). May be repeated not to exceed 10 hours credit. Not open to majors in Poultry Science. Provides experience in poultry science closely relating theory and practice, usually carried on simultaneously.

COURSES FOR GRADUATE STUDENTS

604. ADVANCED POULTRY PRODUCTION (5). Spring. Advanced studies on phases of poultry production.
606. ADVANCED POULTRY BREEDING (5). LEC. 4, LAB. 2. Fall. Advanced studies of the principles of heredity as applied to poultry breeding.
607. SPECIAL PROBLEMS (CREDIT TO BE ARRANGED.) Pr., departmental approval. (A) nutrition, (B) physiology, (C) path-parasitology, (D) microbiology, (E) immunochemistry, (F) management.
608. SEMINAR (CREDIT TO BE ARRANGED.) Fall, Winter, Spring, Summer. Literature in Poultry Science and other fields related to poultry. Emphasis will be given to the preparation, organization and presentation of research material by students and to reporting of current literature in the field. For seniors in Poultry or Animal Science as well as graduate students.
610. NUTRIENT UTILIZATION (4). Lec. 4. Pr., PH 505 or equivalent. Winter, odd years. Strategy in the recovery of nutrients from feed by the gastrointestinal tract will be the focus of attention. Post-absorptive transition of these nutrients to accomplish growth and egg formation is to complement digestive activities. Mammalian comparisons, particularly for the pig, are to be given concurrently.
611. ADVANCED POULTRY MANAGEMENT (5). LEC. 5. Summer. An advanced study of the principles of management of commercial poultry flocks.
612. DIAGNOSTIC LABORATORY TECHNIQUES IN AVIAN MEDICINE (5). LEC. 1, LAB. 6. Pr., departmental approval. Quarter by arrangement. Isolation, cultivation and identification of microbial pathogens which infect avian species. Quantification of antibodies against these pathogens using serologic techniques. Emphasis on techniques used in modern microbiological diagnostic laboratories.
613. ADVANCED POULTRY DISEASES (5). LEC. 1, LAB. 8. Pr., VPY 518 and PH 612 or equivalent. Spring, even years. A continuation of PH 612 with emphasis on those disease conditions caused by protozoa, helminths and arthropods and the gross and histopathology of diseases studied in both quarters.
614. IMMUNOCHEMISTRY (5). LEC. 3, LAB. 4. Pr., general bacteriology, immunology and organic or biochemistry. Fall, odd years. An advanced study of the fundamental principles of immunology, including specificity, antibody synthesis and the thermodynamics of antigen-antibody reactions. Laboratory will include the use of immunodiffusion, immunoelectrophoresis, fluorescent-antibody technique and quantification of the precipitin reaction.
615. AVIAN PHYSIOLOGY (5). LEC. 2, LAB. 6. Pr., ZY 524 and organic chemistry. Fall, odd years. The general physiology of birds with particular reference to domesticated species.
616. LABORATORY TECHNIQUES IN MOLECULAR VIROLOGY (5). LEC. 1, LAB. 8. Pr., departmental approval. Quarter by arrangement. Isolation, purification and identification of viral nucleic acids and proteins. Synthesis of non-radiolabeled nucleic acid and monoclonal antibody probes. Southern, Northern and Western blotting of nucleic acids and proteins and their detection using synthesized probes.
620. TRANSMISSION AND SCANNING ELECTRON MICROSCOPY (5). LEC. 2, LAB. 6. Pr., graduate standing and departmental approval. Spring. Theory and operation of the transmission and scanning electron microscopes, techniques in fixation, embedding, sectioning and staining. Interpretation of ultrastructures.
621. IMMUNOELECTRON MICROSCOPY (5). LEC. 2, LAB. 8. Pr., PH 620 and departmental approval. Fall, even years. Theory and practice of labelling immunoglobulins with electron dense markers and visualization of antigen-antibody reactions at the ultrastructural level.
699. RESEARCH AND THESIS (CREDIT TO BE ARRANGED.) Technical laboratory problems related to poultry.
799. RESEARCH AND DISSERTATION (CREDIT TO BE ARRANGED.)

Psychology (PG)

Professors O'Leary, Chair, Blashfield, Burkhardt, Buskist, Gynther, Hopkins, Johnston,
Lewis, McGlynn and Vuchinich
Alumni Professor Tucker
Hudson Professor Harzem
Associate Professors Critchfield, El-Sheikh, Fleming, McCoy, Newland and Shapiro
Assistant Professors Doepeke and Lazarte
Visiting Assistant Professors Babcock and Milliken

- 201. INTRODUCTORY PSYCHOLOGY (5). Introduction to the various subfields of psychology.
- 212. DEVELOPMENTAL PSYCHOLOGY (5). Introduction to cognitive, social and emotional development across the life span.
- 251. SELF-MANAGEMENT (5). How to organize, change and manage one's life.
- 252. PSYCHOLOGY AND SOCIAL ISSUES (5). Overview of the role psychology plays in addressing major social issues and problems.
- 253. DRUGS AND BEHAVIOR (5). Introduction to behavioral effects of drugs, including drug abuse and its treatment.
- 254. ENVIRONMENTAL PSYCHOLOGY (5). Psychological phenomena involved in the interaction between people and the environment.
- 303. RESEARCH METHODS IN PSYCHOLOGY (5). Pr., PG 201 or departmental approval. Survey of the use of descriptive and experimental methods in psychology.
- 304. QUANTITATIVE ANALYSES IN PSYCHOLOGY (5). LEC. 3, LAB. 2. Pr., PG 201 and MH 160 or equivalent.
- 305. HISTORY OF IDEAS IN PSYCHOLOGY (5). Pr., PG 201 or departmental approval. The main ideas, through the centuries, having an influence on the study of psychological phenomena.
- 350. APPLIED BEHAVIOR ANALYSIS (5). Pr., PG 201 or departmental approval. Behavioral principles in the management of human action.
- 351. BEHAVIORAL NEUROSCIENCE (5). Pr., PG 201 or departmental approval. Physiological bases of behavior with emphasis on the nervous system.
- 352. PSYCHOLOGY OF LEARNING (5). LEC. 3, LAB. 2. Pr., PG 201 or departmental approval. Phenomena involved in the acquisition of knowledge, skills and patterns of action.
- 353. PSYCHOLOGY OF SENSING AND PERCEIVING (5). LEC. 3, LAB. 2. Pr., PG 201 or departmental approval. Perceptual phenomena and the structure and function of sensory systems.
- 354. PSYCHOLOGY OF THINKING AND REMEMBERING (5). Pr., PG 201 or departmental approval. Phenomena involved with thinking and remembering.
- 356. ABNORMAL PSYCHOLOGY (5). Pr., PG 201 or departmental approval. Description, etiology and treatment of abnormal behavior.
- 357. PERSONALITY (5). Pr., PG 201 or departmental approval. Theories and research in personality.
- 358. SOCIAL PSYCHOLOGY (5). Pr., PG 201 or departmental approval. Psychology of human social behavior.
- 359. INDUSTRIAL/ORGANIZATIONAL PSYCHOLOGY (5). Pr., PG 201 or departmental approval. Psychology in business, industry and public organizations.
- 360. TRAINING AND SUPERVISION OF INDUSTRIAL PERSONNEL (5). Applications of the principles of learning to the motivation and training of factory, office and sales employees.
- 400. PSYCHOLOGY IN THE CRIMINAL JUSTICE SYSTEM (5). Pr., PG 201 or departmental approval. Psychological theory and research applied to the criminal justice system.
- 401. PSYCHOLOGY OF WOMEN AND GENDER (5). Pr., PG 201 or departmental approval. Biological, social and cultural differences on gender similarities and differences.
- 402. PSYCHOLOGY OF SEXUAL BEHAVIOR (5). Pr., PG 201 or departmental approval. Biological, social and psychological dimensions of human sexuality.
- 408. HEALTH PSYCHOLOGY (5). Pr., PG 201 and 352 or departmental approval. Psychological principles in health maintenance and health problems.
- 410. INTRODUCTION TO CLINICAL PSYCHOLOGY (5). Pr., PG 201 and 356 or departmental approval. Assessment and intervention in clinical settings.
- 411. DEVELOPMENTAL DISABILITIES (5). Pr., PG 201 or departmental approval. Psychological principles in the care and treatment of developmentally disabled persons.
- 414. HUMAN SERVICE PRACTICUM (5). Pr., PG 201, 352, 411, 413 and departmental approval. Supervised experience in service delivery settings relevant to students' area of interest: industrial/organizational, criminal justice, mental health or developmental disabilities. May enroll only once. S-U Grading.
- 421. DEVELOPMENT OF INFANTS AND CHILDREN (5). Pr., PG 201 or departmental approval. Human development from conception through development.
- 422. ADOLESCENT DEVELOPMENT (5). Pr., PG 201 and 212 or departmental approval. Psychological development in adolescence.
- 423. ADULT DEVELOPMENT (5). Pr., PG 201 and 212 or departmental approval. Psychological development from adolescence through adulthood.

- 441. PSYCHOLOGY OF LANGUAGE (5). Pr., PG 201 and 352 or departmental approval. Acquisition and modification of language and its interactions with other psychological phenomena.
- 473. HONORS RESEARCH AND THESIS (1-5). Pr., admission to University Honors Program. Research in specialized topics.
- 490. HONORS READINGS AND SPECIAL TOPICS (3-6). Pr., admission to University Honors Program; junior or senior standing. May be repeated for a maximum of six hours. Open only to students in the Honors Program with the consent of the Honors Program Advisor.

ADVANCED UNDERGRADUATE AND GRADUATE

- 501. CHILD AND ADOLESCENT PSYCHOPATHOLOGY (5). Pr., PG 201, 212 and 356 or departmental approval. Description, etiology and treatment of psychological disturbances in children and adolescents.
- 502. BEHAVIOR THERAPY (5). Pr., PG 201 and 352 or departmental approval. History, methods and outcomes of behavior assessment and behavior therapy.
- 505. TESTS AND MEASUREMENT (5). Pr., PG 303 or departmental approval. Theories of measurement and psychological testing with examples of their applications.
- 518. PSYCHOLOGY OF ENVIRONMENTAL DESIGN (5). Pr., departmental approval. Psychological knowledge significant in the effective design of objects and of broader environments.
- 550. INDEPENDENT STUDY (5). Pr., junior standing and departmental approval. Students may take up to 15 hours. Work under the direction of a faculty member on a psychological topic of mutual interest. Only five hours count toward the major.
- 551. SEMINAR IN PSYCHOLOGY (5). Pr., departmental approval. Seminar in research and theory in psychological topics.

COURSES FOR GRADUATE STUDENTS

- 600. HISTORY OF IDEAS IN PSYCHOLOGY (4). Historical developments in psychology with emphasis on the major theories and systems which have had an impact on current conceptions in psychology.
- 601. ETHICS AND PROBLEMS OF PROFESSIONAL AND SCIENTIFIC PSYCHOLOGY (2). Survey of ethical issues and current problems in professional and scientific psychology. Analysis of empirical and theoretical issues in community psychology.
- 603. SCIENTIFIC FOUNDATIONS OF PSYCHOLOGY (4). An examination of man's attempts to understand man and man's attempts to understand the universe from the classical Greek era to the mid-19th century.
- 604. CONCEPTUAL AND THEORETICAL ANALYSIS IN PSYCHOLOGY (4). Pr., PG 408 and PG 600 or departmental approval. Techniques of conceptual analysis with reference to interpretation and integration of psychological data and evaluation of alternative theories.
- 605. INTRODUCTION TO CLINICAL METHODS (2). Interviewing skills; crisis intervention; and professional and ethical issues in providing clinical services.
- 606. ADVANCED PSYCHOLOGY OF ABNORMAL CHILDREN AND ADOLESCENTS (4). Pr., PG 601, PG 605, departmental approval. An examination of the current research and theory of behavioral, cognitive and emotional disorders in childhood and adolescence.
- 607. PSYCHOLOGICAL ASSESSMENT OF CHILDREN (4). Pr., PG 606, 670. Psychology majors only. Introduction to the cognitive and personality assessment of infants, children and adolescents with supervised practicum.
- 608. TECHNIQUES OF PSYCHOTHERAPY AND BEHAVIOR CHANGE WITH CHILDREN (4). Pr., PG 607 and departmental approval. Introduction to methods of prevention and treatment of cognitive, emotional and behavioral disorders of children and adolescents.
- 609. RESEARCH SEMINAR IN PSYCHOLOGY (1-2). Overview of the research process, including the development of research questions, proposal writing and issues involved in protecting the welfare of research participants.
- 610. ADVANCED INDUSTRIAL PSYCHOLOGY (4). Pr., PG 315 and PG 359 or departmental approval. Analysis of major issues in industrial psychology.
- 611. ADVANCED ORGANIZATIONAL PSYCHOLOGY (4). Pr., PG 359 or departmental approval. Analysis of major issues in organizational psychology.
- 612. CLINICAL/INDUSTRIAL PSYCHOLOGY (4). Pr., PG 610 and 611 or departmental approval. Mental health issues in work organizations and strategies of organizational intervention.
- 613. PSYCHOMETRIC THEORY (4). Pr., PG 515 and departmental approval. Analysis of the mathematical models which underlie various approaches to psychological tests and measurements.
- 614. INSTRUMENTATION IN INDUSTRIAL/ORGANIZATIONAL PSYCHOLOGY (4). Pr., PG 610 and 611 or departmental approval. Construction and use of measurement devices employed in industrial/organizational psychology.
- 615. BEHAVIOR ANALYSIS IN ORGANIZATIONS (4). Methods and results of experimental analyses of behavioral processes in organizations.
- 618. TOPICS IN INDUSTRIAL/ORGANIZATIONAL PSYCHOLOGY (1-5). Pr., PG 610 and departmental approval. In-depth analysis of topics in industrial/organizational psychology. May be repeated for a maximum of 15 hours credit.
- 619. PRACTICUM IN INDUSTRIAL/ORGANIZATIONAL PSYCHOLOGY (1-5). Pr., 20 graduate hours in industrial/organizational psychology and departmental approval. Individual supervised practicum in industrial/organizational psychology with an emphasis on the development of applied.

625. RESEARCH DESIGN (4). Methods and techniques of designing psychological research.
626. QUANTITATIVE METHODS I (4). Pr., PG 315 or departmental approval. The application of analysis of variance techniques to psychological data.
627. QUANTITATIVE METHODS II (4). Pr., PG 626. The application of regression and correlational techniques to psychological data.
628. QUANTITATIVE METHODS III (4). Pr., PG 627. Applications of regression techniques to psychological data. Includes path analysis, analysis of covariance and unequal N's analysis of variance.
629. QUANTITATIVE METHODS IV (4). Pr., PG 628. Application of multivariate techniques such as multivariate analysis of variance, discriminant analysis and canonical correlation to psychological data.
630. QUANTITATIVE METHODS V (4). Pr., PG 627. Factor analysis, analysis of time-dependent data and other quantitative problems of interest to applied/professional psychologists.
634. GROUP BEHAVIOR CHANGE (4). Pr., PG 637, 638 and departmental approval. Group psychotherapy and behavioral group techniques.
635. THEORIES OF PERSONALITY (4). Pr., PG 601. Analysis of current issues in personality theory.
636. MOTIVATION AND REINFORCEMENT (4). Pr., PG 600, PG 681 or departmental approval. Recent literature on motivation and the process of reinforcement. Critical review of current theories of motivation.
637. ADVANCED PSYCHOLOGY OF ABNORMAL ADULTS (4). Pr., PG 601. Current theoretical conceptions and research in psychopathology.
638. SYSTEMS OF PSYCHOTHERAPY (4). Pr., 635 and 637 or departmental approval. A survey of theories and research related to modern systems of psychotherapy.
639. PRACTICUM IN BEHAVIOR CHANGE (1-5). Pr., PG 635, 637, 638 and/or departmental approval. Must be taken at least four consecutive quarters. A minimum of 8 hours is required for Ph.D. in clinical psychology. May be repeated for a maximum of 20 hours. Psychology majors only. Individual supervision in psychotherapy and behavior change with emphasis on applied clinical skills.
641. EXPERIMENTAL METHODS IN BEHAVIORAL RESEARCH I (4). LEC. 4, LAB. 2. Pr., PG 620. Strategies and tactics of measuring the behavior of individual subjects.
642. EXPERIMENTAL METHODS IN BEHAVIORAL RESEARCH II (4). LEC. 4, LAB. 2. Pr., PG 641. Strategies and tactics of within-subject experimental design.
645. COMPARATIVE PSYCHOLOGY (4). LEC. 2, LAB. 10. Pr., PG 681. Analysis of intra- and inter-species behavior emphasizing physical and physiological uniqueness, response comparability and generalizability of behavioral principles.
650. THEORIES OF LEARNING (4). Pr., PG 681. A survey of major theories of learning.
651. CURRENT DEVELOPMENTS IN THEORIES OF BEHAVIOR (4). Pr., PG 550 and 650 or departmental approval. Analysis and evaluation of current development in theories of behavior.
652. ISSUES IN APPLIED BEHAVIORAL RESEARCH AND PRACTICE (4). Pr., PG 620. Critical examination of the history, research directions and issues in technological behavioral research and practice.
654. HUMAN OPERANT BEHAVIOR (4). Pr., PG 681. Survey of studies of human operant behavior.
655. INTRODUCTION TO COGNITIVE PSYCHOLOGY (4). LEC. 3, LAB. 4. Pr., PG 620 or departmental approval. A survey of the nature of humans intellectual functioning, including pattern recognition, memory, problem solving, reasoning and language comprehension and generation.
656. BEHAVIOR THERAPY (4). LEC. 3, LAB. 4. Pr., PG 601. Principles of behavior modification and practical experience to supplement classroom discussion.
657. ADVANCED BEHAVIOR THERAPY (4). Pr., PG 656 and/or departmental approval. The application of behavior therapy procedures within a single-case methodological framework.
658. HEALTH PSYCHOLOGY AND BEHAVIORAL MEDICINE (4). Contemporary research in health psychology and behavioral medicine and the empirical foundations of clinical practice.
659. BEHAVIOR THERAPY FOR ANXIETY DISORDERS (4). Review of theory and research that guides the application of behavior therapy in treating adults who have anxiety disorders.
660. BEHAVIORAL PHARMACOLOGY (4). Pr., PG 681 or departmental approval. Contemporary research in drug-behavior interactions. Both behavioral and pharmacological mechanisms of action will be covered. Basic principles of behavior and of pharmacology will be introduced as needed.
661. BEHAVIORAL EFFECTS OF ENVIRONMENTAL CONTAMINANTS (4). Pr., graduate standing and permission of department. Behavioral effects of environment toxicants, including heavy metals, solvents, pesticides, fuels and drugs. Coverage will include laboratory and field assessment of the effects of neurotoxic substances in human and non-human species, risk and hazard assessment in human populations, consequences of prenatal exposure to chemicals and legislative issues.
662. THEORY AND METHOD IN HUMAN ALCOHOL AND DRUG RESEARCH (4). Theoretical framework and methodological practices in basic research on human alcohol and drug abuse.
663. ASSESSMENT AND TREATMENT OF ALCOHOL AND DRUG PROBLEMS (4). Conceptual and empirical bases of clinical assessment and intervention for alcohol and drug problems.
668. BEHAVIORAL ASSESSMENT (4). Pr., PG 641 and 642. Introduction to the conceptual foundations and techniques of behavioral assessment.
669. OBJECTIVE TECHNIQUES OF ASSESSMENT (4). Pr., PG 515. Examination of controversial issues in objective personality assessment.

Rehabilitation and Special Education

670. ASSESSMENT OF COGNITIVE ABILITIES (4). LEC. 2 LAB 10. Pr., PG 669 and departmental approval. Theories and techniques for the assessment of intelligence and cognitive abilities.
671. PERSONALITY ASSESSMENT I (4). LEC. 5. Pr., PG 669 and departmental approval. Objective personality assessment with emphasis on the MMPI.
672. PERSONALITY ASSESSMENT II (4). LEC. 3, LAB. 6. Pr., PG 669 and departmental approval. Projective methods: Rorschach.
673. PERSONALITY ASSESSMENT III (CREDIT TO BE ARRANGED.) (Maximum of five hours credit may be applied to minimum requirements for master's degree.) Supervised practicum in personality assessment. Psychology majors only.
676. TEACHING OF PSYCHOLOGY (1-3) (S-U). Pr., departmental approval. May be taken more than one quarter; credit in this course cannot count toward fulfilling the minimum 45 graduate hours for a master's degree. The problems and practices of teaching psychology at the college level. In addition to seminar meetings, students will work with senior faculty in appropriate courses.
677. SEMINAR IN TEACHING OF PSYCHOLOGY (1-3). Pr., PG 676. Current research and practice in the teaching of psychology at the college level. Supervised teaching experience in upper division courses. S-U graded. May be taken more than one quarter.
680. CURRENT RESEARCH IN PSYCHOLOGY (2). May be repeated for a maximum of 10 hours credit. Pr., departmental approval. Review of current research on topics in psychology. Six hours credit in this course required of all doctoral students.
681. PROSEMINAR I: LEARNING AND CONDITIONING (5). Pr., PG 320 or departmental approval. Respondent conditioning and operant behavior. Including acquisition of language and other forms of individual/environmental interactions.
682. PROSEMINAR II: INDIVIDUAL DIFFERENCES AND HUMAN DEVELOPMENT (5). Models of individual variation in human behavior and developmental change.
683. PROSEMINAR III: BIOLOGICAL BASES OF BEHAVIOR (5). Behavior from a biological perspective, including theory and research from the neurosciences and biopsychology.
684. PROSEMINAR IV: SOCIAL BEHAVIOR (5). Survey of topics and literature on the social foundations of behavior.
685. PROSEMINAR V: THINKING, REMEMBERING AND PERCEIVING (5). How external, internal and previous environmental conditions affect thinking, remembering and perceiving.
692. RESEARCH IN SPECIAL TOPICS (CREDIT TO BE ARRANGED.) (S-U). May be taken more than one quarter but not more than one registration permitted in any one quarter.
699. RESEARCH AND THESIS (CREDIT TO BE ARRANGED.) May be taken more than one quarter.
731. ADVANCED SOCIAL PSYCHOLOGY (4). Pr., 684 or departmental approval. Theories, research and issues in contemporary social psychology.
790. SEMINAR (CREDIT TO BE ARRANGED.) May be taken more than one quarter but not more than one registration permitted in any one quarter.
799. RESEARCH AND DISSERTATION (CREDIT TO BE ARRANGED.) May be taken more than one quarter.

Rehabilitation and Special Education (RSE)

Professors Browning, Head, Darch, Eaves and Simpson

Associate Professors Baird, Brown and McDaniel

Assistant Professors Dunn, Lustig and Reilly

B.S. in Ed., M.Ed., M.S. in Ed., Ed.S., and Ph.D. degrees are offered in the Department of Rehabilitation and Special Education. At the Bachelor's and Master's degree levels in Special Education, students are prepared for positions as teachers or clinicians in public schools and other agencies which serve exceptional children and youth. The Bachelor's and Master's degree programs in Rehabilitation prepares students for specialties in rehabilitation counseling, vocational evaluation and community rehabilitation programs in public schools and other youth and adults agencies. The goal of the Ed.S. and Ph.D. programs is to prepare advanced graduate students to assume leadership positions in the areas of university teaching, research and administration of direct service programs for exceptional children and adults.

In the following RSE courses, the (**) denotes that certain sections of common offerings are identified by use of letter designations as noted: (X) Mild Learning/Behavior Disorders, (L) Learning Disabilities, (S) Speech-Language Pathology, (B) Emotional Disturbance, (M) Mental Retardation, (G) General Rehabilitation and Special Education, (R) Rehabilitation and (C) Early Childhood Special Education.

100. ORIENTATION FOR SPECIAL EDUCATION (1). Helps transfers from other curricula and students outside the program to understand teacher education and teaching as a profession.
310. SURVEY OF EXCEPTIONALITIES (5). LEC. 4, LAB. 2. Introduction to the major categories of exceptionalities with emphasis on the educational and training implications of each.
320. INTRODUCTION TO SPECIAL EDUCATION (5). LEC. 5. Pr., RSE 310. Provides skills necessary to organize the special education instructional program.

321. INTRODUCTION TO SPEECH PATHOLOGY IN SPECIAL EDUCATION (5). LEC. 5. Pr., junior standing. Provides skills necessary to organize a speech-language pathology program in a public school setting within federal, state and local guidelines.
330. CAREERS IN REHABILITATION SERVICES (5). History, legal basis and fields of rehabilitation services. Exploration of specialty fields in medical and vocational rehabilitation such as occupational and physical therapy, speech pathology, social work, vocational evaluation, adjustment services and rehabilitation counseling. Emphasis on those working with disabled persons and adjustment to disability.
409. ASSESSMENT IN SPECIAL EDUCATION (5). LEC. 4, LAB. 2. Pr., FED 400, RSE 310, 320. Application of concepts in assessment in special education. Selection/construction of instruments, collection, summation and interpretation of diagnostic/assessment data. Emphasis on diagnostic/assessment instruments appropriate for exceptional students.
411. ASSESSMENT OF YOUNG CHILDREN WITH DISABILITIES (5). LEC. 4, LAB. 2. Pr., FED 400, RSE 310, 320. Assessment terminology and concepts, eligibility requirements for early intervention services, adaptations for children with varying exceptionalities. Administration procedures for developmental screening, assessment and intervention planning are addressed.
412. ASSESSMENT IN SPEECH PATHOLOGY IN SPECIAL EDUCATION (5). LEC. 5. Pr., junior standing. Provides theoretical and practical background in methods, instruments and procedures used to identify and assess communication disorders in preschool and school-aged children and youth.
414. ASSESSMENT TECHNIQUES IN REHABILITATION (3). LEC. 2, LAB. 2. Pr., junior standing. Selection, administration, scoring and interpretation of standardized achievement, aptitude, personality, dexterity, interest and intelligence measures. Emphasis is given to current criterion-referenced measures.
415. BEHAVIOR CHANGE AND PROFESSIONAL COMMUNICATION IN REHABILITATION (3-5). LEC. 2, LAB. 2. Pr., junior standing. Theory and application of basic behavior change techniques useful in job coaching/supported employment settings. Ecological vocational evaluation strategies including job site analysis and modification are included. Analysis and synthesis of data into a professional report.
420. TEACHING METHODS IN SPECIAL EDUCATION (5). LEC. 5. Pr., RSE 310. Introduction to methods and materials that are effective with students with disabilities.
421. EDUCATIONAL DIAGNOSIS AND ASSESSMENT IN SPECIAL EDUCATION ** (5). LEC. 4, LAB. 2. Pr., FED 400. Application of concepts in measurement and evaluation in education: Selection/Construction of instruments, collection, summation and interpretation of diagnostic/assessment data. Emphasis is on diagnostic/assessment instruments most appropriate for referred exceptional students.
425. PROFESSIONAL INTERNSHIP** (15). Pr., senior standing, admission to Teacher Education prior to Internship, appropriate professional courses. Provides supervised, on-the-job experiences in a school, college or other appropriate setting. These experiences will be accompanied by regularly scheduled discussion periods to provide positive evaluation and analysis of the intern experience. Sections C or X.
435. MANAGING BEHAVIOR IN SPECIAL EDUCATION (5). LEC. 4, LAB. 2. Pr., RSE 310. Provides skills necessary to manage the behavior of special education students.
440. MATERIALS IN ELEMENTARY SPECIAL EDUCATION (5). LEC. 4, LAB. 2. Pr., RSE 100. Provides understanding of a functional/developmental approach to the selection, development, implementation and evaluation of appropriate curriculum activities for the instruction of children with disabilities in grades N-6.
441. MATERIALS IN SECONDARY SPECIAL EDUCATION (5). LEC. 4, LAB. 2. Pr., RSE 310, 410 and 420 or departmental approval. The selection, development, implementation and evaluation of appropriate curriculum materials for the students with disabilities in grades 7-12.
442. METHODS AND MATERIALS: EARLY CHILDHOOD SPECIAL EDUCATION (5). Pr., RSE 310. Awareness of the impact of disabilities on the process of child-individualized educational programs; procedures for planning and implementing intervention programs in individual and group settings.
443. METHODS/MATERIALS IN SPEECH PATHOLOGY (5). LEC. 5. Pr., junior standing or departmental approval. Provides information regarding special instruction issues and topics relevant to a speech-language pathology program in a public school setting.
446. DIRECTED INDEPENDENT STUDY** (1-10). The student's learning efforts are guided toward desired objective. Includes evaluation by professor and student of work accomplished at regular intervals.
450. SPECIAL TOPICS** (1-5). Seniors and professors pursue cooperatively selected concepts and theoretical formulations.
495. PRACTICUM** (1-10). Provides experiences relating theory and practice, usually carried on simultaneously. Sections C, S or X.

ADVANCED UNDERGRADUATE AND GRADUATE

500. MENTAL RETARDATION (5). LEC. 4, LAB. 2. Pr., RSE 310 or departmental approval. Theoretical issues, research, diagnosis and educational approaches involved with individuals with mental retardation.
501. LEARNING DISABILITIES (5). LEC. 4, LAB. 2. Pr., RSE 310 or departmental approval. Theoretical issues, research, diagnosis and educational approaches involved with children with learning disabilities.
502. BEHAVIOR DISORDERS (5). Pr., departmental approval. Characteristics and possible causes of emotional/behavior disorders of school-age students. Focuses on emotional needs of students with emotional/behavior disorders.
510. OCCUPATIONAL INFORMATION (3). LEC. 2, LAB. 2. Pr., junior standing. (Also listed as VED 510.)

Rehabilitation and Special Education

520. TRANSITION AND COMMUNITY-BASED REHABILITATION (5.) The legislative and philosophical components of community-based rehabilitation. Principles for providing occupational orientation and work experience techniques, curriculum planning, job classification and evaluation, selection and placement in the context of school-to-work transition programs.
530. EVALUATION AND TRAINING IN VOCATIONAL REHABILITATION (4). LEC. 3 HOURS DAILY FOR 6 WEEKS, INTERNSHIP 4 WEEKS. Pr., junior standing. Purposes, principles and techniques of client evaluation and training, including personal, social and physical adjustment, vocational choice and selected techniques used in the evaluation and training process.
531. RESEARCH IN EVALUATION AND TRAINING IN VOCATIONAL REHABILITATION (4). LEC. 3 HOURS DAILY FOR 6 WEEKS, INTERNSHIP 4 WEEKS. Pr., junior standing. A problem using research techniques, to be selected in consultation with the supervising professor.
532. INSTRUCTIONAL PROGRAMS IN WORKSHOPS AND REHABILITATION FACILITIES (5).
533. MANAGEMENT OF VOCATIONAL REHABILITATION WORKSHOPS AND FACILITIES (5).
535. INTRODUCTION TO VOCATIONAL EVALUATION (5). Pr., junior standing. History, philosophy, theoretical bases and present status of vocational evaluation. Survey of the vocational evaluation process, principles, techniques and procedure. Innovative methodology and future trends in vocational evaluation are explored.
536. SYSTEMS OF VOCATIONAL EVALUATION (3). LEC. 1, LAB. 4. Pr., VED 535, junior standing. Instruction and supervised practice in the application of the GATB, the JEVS system, the TOWER system, the Singer/Graflex system and related techniques of vocational evaluation.
538. WORK ADJUSTMENT IN REHABILITATION (5). Pr., junior standing. 10 hrs. Psych., 10 hrs. Rehab. History, development, theoretical base and techniques of work adjustment in rehabilitation.
540. COLLABORATION AND CONSULTATION IN SPECIAL EDUCATION (5). Pr., RSE 310. Provides an understanding of the concerns of professionals, paraprofessionals and families with children who have disabilities. Provides professional experiences.
542. SURVEY REHABILITATION WITH THE BLIND AND VISUALLY HANDICAPPED (4).
543. VOCATIONAL EVALUATION AND ADJUSTMENT OF BLIND AND VISUALLY HANDICAPPED (4).
544. SURVEY OF REHABILITATION WITH DEAF AND HEARING IMPAIRED (4).
546. VOCATIONAL EVALUATION OF DEAF AND HEARING IMPAIRED (4).
549. SYSTEMS OF VOCATIONAL EVALUATION FOR THE RETARDED (3). LEC. 1, LAB. 4. Pr., RSE 535, junior standing. Instruction and supervised practice in the development, evaluation and application of commercial systems of vocational evaluation for use with the mentally retarded.
550. EARLY LANGUAGE DEVELOPMENT/PHYSICAL MANAGEMENT IN EARLY CHILDHOOD SPECIAL EDUCATION (5). LEC. 4, LAB. 2. Systematic and holistic approach to intervention programming for communication development and physical management of young children with disabilities.
- 556R. LEARNING RESOURCES IN AREA OF SPECIALIZATION** (4). Pr., junior standing. Introduction on the use of microcomputers and technology by persons with disabilities and professionals serving such persons.
580. SPECIFIC LEARNING PROBLEMS (5). Pr., RSE 500 OR 501. Existing theories and instructional programs for students with learning and behavioral problems. Emphasis on classroom management, individual education evaluation and reading and math curriculum adaptation.
586. THE SEVERELY MULTIPLY HANDICAPPED (3). Children and youth functioning at the severe or profound mental retardation level with concomitant problems, such as behavior, sensory and physical handicaps. Emphasis is on identification and educational programming.
588. EDUCATIONAL APPROACHES WITH HANDICAPPED INFANTS AND TODDLERS (4). Pr., RSE 375 or 376. Provides students with an understanding of the developmental stages in infancy through two years, activities appropriate at each stage and techniques for stimulating the child who is not developing at the normal rate.

COURSES FOR GRADUATE STUDENTS

600. ADVANCED STUDY OF EXCEPTIONALITY (5). Pr., appropriate undergraduate preparation in Special Education or departmental approval. Advanced study of the several types of exceptionality with emphasis on the educational and training implications of each.
603. PRESCRIPTIVE TEACHING FOR SPECIAL LEARNING PROBLEMS (5). Pr., RSE 375 or 376, RSE 602 and FED 661. In-depth instruction; specialized methods of prescriptive program planning based on educational assessments of children with learning problems. Development and presentation of instructional tasks are included.
609. ADVANCED ASSESSMENT IN SPECIAL EDUCATION (5). Pr., RSE 310 or 500 and FED 661. Comprehensive study of tests and procedures for diagnosing special learning problems. In-depth instruction in educational assessment in such areas as perceptual-motor, language, academic aptitude and achievement.
610. INTRODUCTION TO REHABILITATION PROGRAMS, PROFESSIONS AND SERVICES (2). History, parameters, career opportunities and issues in vocational rehabilitation and roles of various professions. (Also offered as CCP 610.)
611. ADVANCED ASSESSMENT IN EARLY CHILDHOOD SPECIAL EDUCATION (5). Pr., FED 661 and RSE 310 or departmental approval. Comprehensive study of tests and procedures for diagnosing special learning problems. In-depth instruction in educational assessment in such areas as perceptual-motor, language, academic aptitude and achievement.

615. ADVANCED TEACHING METHODS IN SPECIAL EDUCATION (5). Pr., RSE 376, 606, FED 661. In-depth approaches to instructional design and program planning based on educational assessments of children with special needs. Development and presentation of instructional tasks are included. Current research focusing on instructional methods for students with special needs will be presented.
625. INTERNSHIP** (5-15). Provides advanced students with supervised, on-the-job experiences in a school, college, or other appropriate setting. These experiences will be accompanied by regularly scheduled on-campus discussion periods provide positive evaluation and analysis of the intern experience. Sections B, C, L, M and X.
630. DIAGNOSTIC VOCATIONAL EVALUATION (4). Process, principles and techniques used to diagnose general assets and liabilities of the individual. Includes the function and analysis of biographical data and the use of the evaluation interview. Emphasis on the rationale underlying the selection and use of psychometric tests in vocational evaluation.
631. PROGNOSTIC VOCATIONAL EVALUATION (4). Pr., RSE 630 or consent of department head. Process, principles and techniques used to determine and predict work behavior and vocational potential. Includes the rationale underlying the selection and use of occupational exploration programs, work samples, situational tasks, simulated work experiences and job tryouts in vocational evaluation.
632. USE AND INTERPRETATION OF VOCATIONAL EVALUATION DATA (4). Pr., RSE 630 and 631 or departmental approval. Process, principles and techniques used in the interpretation of vocational evaluation data to clients, to rehabilitation personnel and to facility staff. Focuses upon the interpretation of data through the formal staff conference, vocational counseling, report writing and follow-up.
634. WORK SAMPLE DEVELOPMENT (5). Pr., departmental approval. Theoretical and technical principles related to the development, standardization and validation of work samples. Supervised experience in the application of work samples development principles.
635. ADVANCED BEHAVIOR MANAGEMENT IN SPECIAL EDUCATION (5). LEC. 4, LAB. 2. Pr., RSE 615. Provides skills necessary to direct academic, social performance and manage the behavior of students with special needs. Provides skills necessary to evaluate the effectiveness of behavior management strategies.
646. DIRECTED INDEPENDENT STUDY ** (1-6). Special study in which the student's learning efforts are guided toward desired objectives. Includes evaluation by professor and student at regular intervals. Sections B, C, L, M, T and X.
650. SEMINAR IN AREAS OF SPECIALIZATION (3-10). May be repeated for credit not to exceed 10 hours. Provides an opportunity for advanced graduate students and professors to pursue cooperatively selected concepts and theoretical formulations.
651. RESEARCH STUDIES IN EDUCATION IN AREAS OF SPECIALIZATION (5). Review, analysis and interpretation of available research with emphasis on designing new research to meet the changing needs of the school.
652. CURRICULUM AND TEACHING IN AREAS OF SPECIALIZATION (5). Teaching practices and reappraisal of selecting experiences and content for curriculum improvement.
653. PROGRAM DESIGN IN AREA OF SPECIALIZATION (5). Program, organization and development of basic and supplementary materials for guiding teachers, faculties and school systems in the continuous improvement of curriculum and teaching practices.
654. EVALUATION OF PROGRAM IN AREAS OF SPECIALIZATION (5). Evaluation and investigation of teaching effectiveness with attention also given to the utilization of human and material resources and the coordination of areas of specialization.
655. PROGRAM DEVELOPMENT IN EARLY INTERVENTION (5). Provides early intervention assessment knowledge and skills. Students learn to use standardized procedures, play-based techniques, observation techniques and other procedures to determine a young child's eligibility for early intervention services and to develop program planning recommendations.
656. PROGRAM MANAGEMENT IN EARLY INTERVENTION (5). Provides information necessary to manage early intervention programs for infants and toddlers with developmental delays.
670. EDUCATIONAL PROCEDURES FOR CHILDREN WITH BEHAVIOR DISORDERS (5). Pr., graduate standing and departmental approval. Analysis of current provisions for children with emotional conflicts, with emphasis on educational procedures and implications for learning disabilities.
671. CURRENT RESEARCH ON THE BEHAVIORAL DISORDERS OF CHILDREN (5). Pr., graduate standing and departmental approval. Examination and interpretation of research. Emphasis on educational implications of emotional conflict, classroom guidance and control.
695. PRACTICUM (1-15). Provides advanced students with experiences closely relating theory and practice, usually carried on simultaneously.
696. GRADUATE RESEARCH FORUM (1). May be repeated but counted only once toward graduation. Presentations by graduate students of research proposals and/or findings. Analysis of procedures and findings.
699. RESEARCH AND THESIS (CREDIT TO BE ARRANGED.) May be taken more than one quarter.
798. FIELD PROJECT (CREDIT TO BE ARRANGED.) May be taken more than one quarter.
799. RESEARCH AND DISSERTATION (CREDIT TO BE ARRANGED.) May be taken more than one quarter.

Religion (RL)

Professors Penaskovic, *Program Director*, and Ledbetter

- 201. INTRODUCTION TO RELIGION (3). Major themes in religion, including religious experience, religion and society and the diversity of religion. Examples from various religious traditions.
- 210. INTRODUCTION TO THE OLD TESTAMENT (5). Historical-critical study of the Old Testament in its cultural setting. Emphasis on development of Old Testament thought.
- 220. INTRODUCTION TO THE NEW TESTAMENT (5). Historical-critical study of the New Testament in its cultural setting. Major issues in New Testament study.
- 230. HISTORY OF CHRISTIANITY (5). Development of Christianity from 100 A.D. to the present. Major personalities, events and movements.
- 245. THE CURRENT RELIGIOUS SCENE (5). Religious themes and developments in contemporary American life.
- 250. INTRODUCTION TO SPIRITUALITY (4). Spiritual growth and development in the context of the major world religions.
- 260. INTRODUCTION TO JUDAISM (3). Treats the biblical beginnings of the Jews, focusing on the Scriptures, the calendar, etc.
- 290. THE HOLOCAUST (3). Examines the history, theology and psychology of the Holocaust, the mass extermination of Jews by the Nazis.
- 300. THE FIRST CHRISTIANS (3). Literature, thought and practices of earliest Christianity.
- 303. EASTERN RELIGIONS (5). Hinduism, Buddhism and Confucianism with secondary attention to other Asian religions.
- 304. WESTERN RELIGIONS (5). Islam, Judaism and Christianity with attention to Druze religion and Bah'ai.
- 320. JESUS (5). Pr., RL 220. Jesus as portrayed in the New Testament and subsequent interpretations.
- 325. PAUL (5). Pr., RL 220. Life, letters and thought of the Apostle Paul.
- 340. RELIGION IN AMERICA (5). Religious activities, institutions and personalities in North America from the Colonial Period to the present.
- 350. 20TH CENTURY RELIGIOUS THOUGHT (5). Pr., one course in religion. Major 20th century theologians – Protestant, Catholic, Jewish.
- 450. SEMINAR (3-5). Pr., RL 201. An intensive examination of a major topic in religious studies.
- 460. HONORS READINGS AND SPECIAL TOPICS (3-5). Pr., admission to AU Honors Program; junior or senior standing. May be repeated for a maximum of five hours. Open only to students in the Honors Program.
- 490. READINGS IN RELIGION (3-5). Pr., junior standing and departmental approval. A program of independent study on a special topic. May be repeated for credit.

Sciences and Mathematics (SM)

- 101. CONCEPTS OF SCIENCE (5). Interdisciplinary course which presents major scientific concepts in a way that demonstrates the interdependence of chemistry, physics, biology and geology. Stresses the interaction between the sciences and the humanities and impact of sciences on everyday life. Credit will not be allowed for both SM 101 and either BI 101 or BI 105.
- 199. PRE-HEALTH PROFESSIONS ORIENTATION (1). Orientation and guidance for all freshmen planning to seek admittance to health professions schools, such as medicine, dentistry, optometry, physical therapy, pharmacy, veterinary medicine and podiatry.
- 399. HOSPITAL EXPERIENCE (1). LAB. 2. Pr., junior standing and departmental approval. Direct observation and interaction with physicians at EAMC in areas, such as pediatrics, internal medicine, psychiatry, family practice, orthopedic surgery, general surgery, emergency dept., radiology and OB/GYN.

Sociology (SOC), Anthropology (ANT) and Social Work (SW)

Professors Kowalski, *Chair*, Faupel, Mohan, Starr and Wilke

Associate Professors Adams, Alley, Cottier, Gundlach and Petee

Assistant Professors Brown and Cameron

Instructors Burque and Myers, *Director of Social Work*

Joint appointees: Professors Dunkelberger and Molnar

SOCIOLOGY (SOC)

- 201. INTRODUCTION TO SOCIOLOGY (3). Principles and processes of society. Open to freshmen.
- 202. SOCIAL PROBLEMS (5). Pr., SOC 201. A sociological analysis of current social problems such as crime, mental illness, race relations, poverty, aging, etc.
- 203. POPULATION AND SOCIETY (5). A survey of theories and research on how the demographic processes interact with such social institutions as the economy, education, family, medicine, science and technology.
- 204. SOCIAL BEHAVIOR (5). Pr., SOC 201 or PG 211. Integrated social psychological factors which influence or determine human behavior; the emphasis is upon the normal individual and/or group situations.
- 220. STATISTICS (5). Pr., SOC 201. Basic statistical concepts, measures, and techniques used in sociological reports and research.

301. SOCIOLOGY OF THE FAMILY (5). Pr., SOC 201. The American family in perspective. Theory and method in sociological studies of the family.
304. MINORITY GROUPS (5). Pr., junior standing. Various and diverse social minority groups with emphasis on creation and maintenance of minority and dominant group status within the American stratification system.
350. SOCIOLOGY COLLOQUIUM (1). Pr., SOC 201. Orients sociology majors toward major substantive fields of the discipline. May be repeated for maximum of three credit hours.
360. INTRODUCTION TO SOCIAL EPIDEMIOLOGY (5). Pr., SOC 201. The influence of social conditions and demographic characteristics on health and well-being, emphasizing social aspects of major diseases and other problems such as mental disorders, suicide, homicide, divorce and family violence.
370. METHODS OF SOCIAL RESEARCH (5). Pr., SOC 201 or RSY 261. Principal methods of data collection and analysis in sociological research. Same as RSY 370. Credit in RSY 370 precludes credit in SOC 370.
409. SOCIAL THOUGHT (5). Pr., SOC 201 or equivalent. Focus on pre-Comtian ideas bearing on the definition and emergence of social and behavioral theory.
411. SOCIAL CHANGE (5). Pr., SOC 201 or equivalent. Major theoretical and research perspectives in social and developmental change.
477. SOCIOLOGY OF AGING (3). Pr., SOC 201. A social-cultural treatment of the phenomena of aging emphasizing recent theory and research.
478. SEMINAR IN SOCIOLOGY OF LAW (3). Pr., SOC 201, junior standing. The structure and functioning of the American legal system analyzed with cross-cultural comparisons and institutional interrelations examined. Case method approach is used.

ADVANCED UNDERGRADUATE AND GRADUATE

502. SOCIAL THEORY (5). Pr., SOC 201 or equivalent. Survey of theorists from Comte to the present; emphasizes theory construction, theoretical analysis and differences in theoretical approaches.
504. SOCIOLOGY OF POWER (5). Pr., SOC 201. A systematic concern with the dimensions and distribution of power in social life.
505. URBAN SOCIOLOGY (5). Growth and decline of cities with emphasis on ecological and demographic characteristics, associations and institutions, class systems and housing and city planning.
507. PUBLIC OPINION AND PROPAGANDA AND MEDIA (5). Pr., SOC 201. A survey of social communication emphasizing the formation, use and assessment of publics, ideologies and opinions in mass society.
508. INDUSTRIAL SOCIOLOGY (5). Pr., SOC 201. The sociological approach to business organization and industrial relations. Emphasis given to organization principles operative in the economic life within a social system such as a factory or business establishment.
509. SOCIOLOGY OF RELIGION (5). Pr., SOC 201 or equivalent. Analysis of religion as a social institution as found in the world's great religions.
511. THIRD WORLD DEVELOPMENT (3-5). Pr., SOC 201 or equivalent. Major theoretical perspectives and research accomplished concerning efforts to promote the social and economic development of Third World countries.
514. FIELD INSTRUCTION (1-10). Supplementary instruction concurrent with experience in some field of work involving application of sociological perspectives to community life. May be repeated for a maximum of 10 hours credit.
515. SOCIAL STRATIFICATION (5). Pr., SOC 201. Stratification as a fundamental feature of all societies. Past thought and current research and theory on structured social inequalities is systematically developed.
518. SOCIOLOGY OF OCCUPATIONS (5). Pr., SOC 201. Comprehensive examination of specific occupational categories ranging from professional to service occupations. Emphasis is placed on the relationship of occupational structure and institutions and the meaning of occupations for individuals and society.
520. RACIAL AND ETHNIC RELATIONS (5). Pr., 10 hours of SOC or equivalent. Utilizes cross-cultural data to describe situations in which race or ethnicity affect human behavior. These data interpreted by delineating patterns, trends and relationships.
522. SPECIAL TOPICS IN SOCIOLOGY (1-5). Pr., SOC 201 or equivalent. Examines topics from a sociological perspective. May be repeated for a maximum of 10 hours.
525. SEMINAR IN SOCIAL DEVIANCE (5). Pr., SOC 201 or equivalent. Analysis of factors in the creation of and reaction to social deviance. Examines various theoretical approaches to deviance, with particular emphasis on how behavior comes to be defined as deviant.
534. SOCIALIZATION (5). Pr., SOC 201. Examines an important and distinct sociological tradition: mind, self, society and interaction as symbolic phenomena grounded in social processes. Covers major intellectual influences, concepts and figures (e.g., James, Mead, Cooley).
550. DIRECTED READING (1-5). An independent reading program, under supervision, to provide for the pursuit of specific interests in sociology not covered by other course offerings. May be repeated for a maximum of 10 hours credit.
577. SEMINAR IN MEDICAL SOCIOLOGY (5). Pr., SOC 201 or equivalent. The nature and organization of medical practice and health delivery systems. Special attention to role of physicians and various views of patients and disease. Relationship between culture, politics and health.

COURSES FOR GRADUATE STUDENTS

602. SEMINAR IN THE FAMILY (5). Pr., SOC 301 or departmental approval. The institutions of marriage, family and kinship from a comparative and historical perspective.

604. SEMINAR IN RACE AND CULTURE (5). Pr., SOC 201 and SOC 304 or departmental approval. The adjustment of races to culture with particular reference to the South; the historical and cultural background of the races in America; bi-racial system; problems of race relations.
608. ORGANIZATIONAL ANALYSIS (5). A theoretical and empirical examination of the principal features of large-scale organizations in contemporary society. Directed research into particular organizational areas of present-day social life.
610. SEMINAR IN SOCIAL BEHAVIOR (5). Pr., SOC 204, PG 330 or departmental approval. Research and theory concerning social and group influences on behavior.
620. ADVANCED SOCIOLOGICAL THEORY (5). Pr., SOC 502 or departmental approval. Reviews principal types of sociological theory, including conflict theory, exchange theory and structural functionalism. Focuses on significant theoretical issues.
630. STATISTICAL APPLICATIONS IN SOCIOLOGICAL RESEARCH (5). Pr., SOC 220 or departmental approval. A general survey of uses and limitations of statistical techniques used in sociology.
650. SOCIOLOGY SEMINAR (5). May be taken for a maximum of 15 hours. Pr., departmental approval. For those students engaged in intensive study and analysis of sociological subject areas.
661. SOCIOLOGY OF REGIONS (3). Social and demographic phenomena having implication for regional planning and development with emphasis on Southern region and subregions. Intra-regional and interregional influences, sociocultural structure, value orientations, population, changes and trends and metropolitanization.
680. INDEPENDENT STUDY (1-5). Under supervision, to read and study materials in some substantive area of sociology. May be repeated for a maximum of 10 quarter hours.
699. RESEARCH AND THESIS (CREDIT TO BE ARRANGED.) May be repeated for credit.

RURAL SOCIOLOGY (RSY)

For course descriptions, see Department of Agricultural Economics and Rural Sociology.

261. INTRODUCTION TO RURAL SOCIOLOGY (3). Credit not allowed in this course and SOC 201.
362. COMMUNITY ORGANIZATION (5).
370. METHODS OF SOCIAL RESEARCH (5). Pr., RSY 261 or SOC 201.
371. APPLIED RESEARCH METHODS AND PROGRAM EVALUATION (3). Credit not allowed in this and in RSY or SOC 370.
499. DIRECTED STUDIES IN RURAL SOCIOLOGY (1-5).
541. EXTENSION PROGRAMS AND METHODS (5).
561. RURAL SOCIOLOGY (5).
564. SOCIOLOGY OF COMMUNITY DEVELOPMENT (5).
565. SOCIOLOGY OF NATURAL RESOURCES AND ENVIRONMENT (5).

COURSES FOR GRADUATE STUDENTS

For descriptions of these courses, see RSY courses under Agricultural Economics and Rural Sociology

641. EXTENSION PROGRAMS AND METHODS (5).
661. RURAL SOCIOLOGY (5).
662. SOCIOLOGY OF COMMUNITY (3).
663. POLITICAL ECONOMY OF DEVELOPMENT (5).
664. SOCIOLOGY OF COMMUNITY DEVELOPMENT (5).
665. SOCIOLOGY OF NATURAL RESOURCES AND THE ENVIRONMENT (5).
670. RESEARCH METHODS IN SOCIOLOGY (5).
680. SPECIAL PROBLEMS IN RURAL SOCIOLOGY (CREDIT TO BE ARRANGED.)
699. RESEARCH AND THESIS (CREDIT TO BE ARRANGED.)

ANTHROPOLOGY (ANT)

200. BIOSOCIAL BACKGROUND (3). Introduction to the physical and cultural evolution of the human species with emphasis on the fossil record, contemporary human populations and archaeological theories and methods.
201. CULTURAL FRAMEWORK (3). Introduction to cultural anthropology and linguistics, emphasizing the comparative analysis of life ways among both pre-literate and literate populations and societies.
206. CULTURAL ANTHROPOLOGY (5). Pr., ANT 201. The nature of culture. Comparative approach to the principal institutions of human society and basic categories of human behavior.
207. INTRODUCTORY ARCHAEOLOGY (5). The history, principles and methods for investigating and reconstructing past cultures.
303. HISTORY OF ANTHROPOLOGICAL THEORY (5). Pr., ANT 201. The development of ethnological theory.
305. CULTURE AND PERSONALITY (3). Pr., SOC 201 or ANT 201. Sociocultural factors in personality development and recent studies in character types.
306. INTRODUCTION TO PHYSICAL ANTHROPOLOGY (5). LEC. 3, LAB. 3. Pr., ANT 201. Human origins and development; contemporary primate varieties, using a genetic and anthropometric approach.

313. THE ANTHROPOLOGY OF GENDER (5). Pr., ANT 201 or SOC 201. An anthropological and sociological analysis of the status of women in societies, the cultural belief systems involved and problems resulting from status change. (A Women's Studies Minor Course.)
314. ANTHROPOLOGY OF WORK (3). Pr., junior standing. Anthropological theory and data applied to problems of various work settings.
340. ARCHAEOLOGICAL FIELD SCHOOL (5-10). A field methods course, in which archaeological site surveying, excavation and analysis procedures are taught with student participation in directed research projects at a selected archaeological site.
345. ARCHAEOLOGICAL FIELD PROBLEMS (1-3). Pr., ANT 200. A practical investigation of a specific archaeological field problem or problems that involves archaeological excavation techniques, field mapping and data recording.
401. CULTURE, MARRIAGE AND THE FAMILY (5). Pr., ANT 201 or SOC 301. The comparative study of human patterns of marriage, child rearing, inheritance, descent and kinship.
403. CONTEMPORARY ANTHROPOLOGY (5). Pr., ANT 201, junior standing. Contemporary research and theory regarding traditional and urban cultures.

ADVANCED UNDERGRADUATE AND GRADUATE

500. LABORATORY TECHNIQUES IN ARCHAEOLOGY (3-5). Pr., ANT 207. An archaeological methods course in the analysis, preservation, cataloging and restoration of archaeological materials
505. ARCHAEOLOGICAL LABORATORY PROBLEMS (1-3). Pr., ANT 500. Investigates a specific archaeological problem or problems and involves students in laboratory techniques such as data recording, photography and report preparation.
511. LANGUAGE AND CULTURE (5). The social basis of verbal communication; functions of language in society; importance of language in contemporary social problems.
512. GENERAL ETHNOLOGY (5). Surveys ethnological data from several societies in order to provide an understanding of the range and variability of cultural phenomena.
524. SPECIAL TOPICS IN ANTHROPOLOGY (1-5). Pr., ANT 201 or equivalent. Examines topics from an anthropological perspective. May be repeated for a maximum of 10 hours.
531. SOUTHEASTERN ARCHAEOLOGY (5). Pr., ANT 207. Survey of the findings of archaeologists working in Southeastern North America, detailing the diversity and complexity of prehistoric to protohistoric Indian cultures.
532. INDIANS OF NORTH AMERICA (5). Aboriginal cultures of North America. Effects of culture contact. Contemporary problems of Indian communities.
534. MESOAMERICAN ARCHAEOLOGY (5). Pr., ANT 207. A survey of the prehistoric cultures of Mexico and Central America, with particular emphasis on the Olmec, Toltec, Maya and Aztec cultures.
540. HISTORICAL ARCHAEOLOGY AND ETHNOHISTORY (5). A review of the methods and findings of these two subfields, with emphasis on anthropological approaches to the past culture and history of peoples who left few written records: slaves, Indians, lower classes.
550. DIRECTED READING (1-5). Pr., junior standing. An independent reading program, under supervision, to provide for the pursuit of specific interests in anthropology not covered by other course offerings. Can be repeated for a maximum of 10 hours credit.
590. SENIOR THESIS IN ANTHROPOLOGY (3). Pr., senior standing. Independent reading and/or research in selected fields of anthropology. Requires a thesis in anthropology.

COURSE FOR GRADUATE STUDENTS

612. SPECIAL TOPICS IN ETHNOLOGY (5). An intensive study of peoples and cultures from a particular geographical area of cultural adaptation.

CRIMINOLOGY (CR)

302. CRIMINOLOGY (5). Pr., SOC 201. Measurement and distribution of crime; major theoretical perspectives pertaining to crime causation.
308. JUVENILE DELINQUENCY (5). Pr., SOC 201. Major theoretical perspectives, measurement and distribution; historical perspectives on youth crime and delinquency.
415. JUVENILE JUSTICE (5). Pr., CR 302 or 308. Historical development, policies, operations and unique issues and problems related to the juvenile justice system in the United States.
420. PROBATION AND PAROLE (5). Pr., CR 302 or 308. Practices of probation and parole in the U.S. criminal justice system. Emphasizes the historical development of these fields and various issues faced by contemporary practitioners.
426. PENOLOGY (5). Pr., CR 302 or 308. Underlying rationale and viability of the major perspectives influencing contemporary correctional policies.
450. SOCIOLOGY OF CRIMINAL LAW (5). Pr., SOC 201 or equivalent. Examines how and under what conditions behavior comes to be defined as criminal and how legal codes interact with other normative systems in society.
500. SERIAL AND MASS MURDER (5). Analysis of the phenomena of serial homicide and mass murder with emphasis on etiological issues, crime scene investigation and profiling.

501. DRUGS AND SOCIETY (5). Pr., CR 302 or CR 308, junior standing. Emphasizes the social context and correlates of drug usage, relationship with crime and delinquency, the nature of societal reaction and pertinent sociological theories concerning drug related behavior.
510. WOMEN IN THE CRIMINAL JUSTICE SYSTEM (5). Pr., SOC 201 or equivalent. The impact of gender within criminal justice from a sociological perspective: females as victims, offenders and/or practitioners.
514. FIELD INSTRUCTION IN CRIMINOLOGY (1-10). Supplementary instruction concurrent with experience in some field of work related to Criminology. May be repeated for a maximum of 10 hours credit.
515. POLICE AND SOCIETY (5). Pr., SOC 201 or equivalent. The social organization of police, police subcultures, socialization of police officers, decision-making and discretion and the relationship between police and other components of the criminal justice system.
520. VICTIMOLOGY: CRIMINAL—VICTIM RELATIONSHIPS (5). Pr., SOC 201 or equivalent. The impact of victimization upon the victim, offender and society and addresses the relationship between the victim and offender.
522. SPECIAL TOPICS IN CRIMINOLOGY (5). Pr., CR 302 or 308 or departmental approval. Selected topics in the field of criminology. May be repeated for a maximum of 10 hours.
530. CONTEMPORARY CORRECTIONS (5). Pr., CR 302 or 308, junior standing. Historical development and theoretical rationales underlying corrections in the U.S. criminal justice system, as well as, major issues faced by contemporary practitioners.
555. DIRECTED READINGS IN CRIMINOLOGY (VARIABLE CREDIT). An independent reading program, under supervision, to provide for the pursuit of specific interests in criminology not covered by other course offerings. May be repeated for a maximum of 10 hours credit.

SOCIAL WORK (SW)

320. SOCIAL WORK FIELD PRACTICUM (1-5). An introduction to the fields, methods and settings of social work practice through an internship in a selected social work setting. Stresses a basic understanding of social service organizations. Students work under the joint supervision of the placement agency and the university. A seminar is held regularly to evaluate, discuss and interpret the student's work. Social Work majors must earn four hours credit. May be taken by any major for a maximum of five hours credit.
375. INTRODUCTION TO SOCIAL WELFARE (5). Pr., sophomore standing. The development of U.S. social welfare programs, policies and services. Emphasizes political, economic and social factors involved. Introduction to health and welfare services of local community.
376. COMMUNITY SOCIAL SERVICES (5). A review of the social services available in a typical community in areas of health, income, housing, crises, child welfare, legal and mental health. Addresses procedures in linking clients with services and work with minorities, the aged, families and groups.
377. CHILD WELFARE (5). Reviews practice in child abuse and neglect, foster care, child care and adoptions. Addresses work with minorities, court procedures and worker stress. Opportunity for experience.
380. HUMAN BEHAVIOR IN THE SOCIAL ENVIRONMENT I (5). Pr., SOC 201. Integration of social science perspectives for the social work student. Survey interpretations of biological, socio-psychological and cultural determinants of behavior for social work practice. Focus is on individual, family and small group levels.
381. HUMAN BEHAVIOR IN THE SOCIAL ENVIRONMENT II (5). Pr., SW 380. Integrates social science perspectives through a survey of interpretations of biological, social, psychological and cultural determinants of behavior for social work practice. Emphasis is on human behavior in formal organization and communities.
385. AGING ISSUES AND SERVICES (2-5). Pr., SOC 201, SW 375 or equivalent. Reviews social services and social work with elderly and issues in economics, religion, health, mental health, politics, mass media education, biology, housing, nutrition and recreation. Field work option.
420. SOCIAL WORK FIELD PLACEMENT (15). Pr., SW 508. A planned field experience in which the student is placed in a community service agency, working full-time under the joint supervision of the agency and the University. A seminar is held regularly to evaluate, discuss and interpret the student's work. An applied research project must be completed during the quarter.
426. SPECIAL TOPICS IN SOCIAL WORK (1-5). Pr., SOC 201 or equivalent, junior standing. Examines topics from a social work perspective. May be repeated for a maximum of 10 hours credit.

ADVANCED UNDERGRADUATE AND GRADUATE

506. SOCIAL WORK METHODS I (5). Pr., SW 320, 375, 376 and admission to social work program or departmental approval. The first in a sequence of social work practice method courses focusing on the application of knowledge value and skill in carrying out a problem-solving, systems oriented approach with clients at the individual, small group, organization and community level. Emphasis on application of research, process of social change, non-judgmental practitioner stance and regard for cultural, racial, age and lifestyle variations.
507. SOCIAL WORK METHODS II (5). Pr., SW 506. Continuation of SW 506.
508. SOCIAL WORK METHODS III (3). Pr., SW 507. Continuation of SW 507.
575. SOCIAL WELFARE POLICY (5). Pr., SW 375 or equivalent. Current problems, policy issues and proposals in selected social welfare programs are critically examined and evaluated.

Textile Engineering (TT, TC, TE and TMT)

Professors Walsh, Head, and Broughton

Associate Professors El-Mogahzy, Adanur and Gowayed

Assistant Professors Buschle-Diller and Thomas

General Curriculum, CLA, students (those with undeclared majors) may enroll only with departmental consent.

DEPARTMENTAL COURSES (TT)

- 101. INTRODUCTION TO TEXTILES (1). LAB. 3. Freshman orientation to textile programs and options and an introduction to textile terminology.
- 102. SURVEY OF THE TEXTILE INDUSTRY (1). LAB. 3. Pr., TT 101 or departmental approval. Introduction to the scope of the textile industry stressing use of library and interaction with local industry and faculty of the department.
- 103. TEXTILE CAREERS (1). LAB. 3. Pr., TT 102 or departmental approval. Coreq., CSE 100 or 120. A review of career options available to graduates from textile degree programs.
- 211. YARN FORMING SYSTEMS I (5) LEC. 4, LAB. 3. Forming of staple and filament yarns. Interactions between raw materials and manufacturing systems that create specified product characteristics.
- 221. FABRIC FORMING SYSTEMS (5). LEC. 4, LAB. 3. The basic forming systems for textile fabrics including knit, woven and non-woven structures.
- 270. STATISTICS FOR TEXTILE PROCESS CONTROL (5). Pr., sophomore standing. Sampling and analysis of textile data. Fiber selection statistics and methods of handling textile attribute data. Application of Taguchi quality engineering concepts in the textile discipline.
- 299. INDUSTRY PROJECTS (3). Pr., sophomore standing and departmental approval. A directed project in an industrial setting addressing current, significant problems identified by the industrial sponsor. May be taken twice as elective credit.
- 350. TESTING OF TEXTILE MATERIALS (4). LEC. 2, LAB. 6. Pr., TT 211 and 221. Basic principles of measuring the physical and chemical properties of natural and man-made textile materials; included supplementary laboratory experiments.
- 471. HONORS READINGS AND SPECIAL TOPICS (3-6). Pr., admission to University Honors Program; junior or senior standing. May be repeated for a maximum of six hours. Open only to students in the Honors Program with the consent of the Honors Program Advisor.
- 479. HONORS THESIS (3). Pr., senior standing. Individual student endeavor consisting of directed research and writing of honors thesis. (Honors Program students only. May be taken more than once and may be substituted for TC 490/491, TE 490/491 or TMT 490/491).

TEXTILE CHEMISTRY (TC)

- 409. SPECIAL TOPICS (1-5). Pr., departmental approval. Reading course with varying emphases to give student opportunity for overview in specific areas of textile technology. (May be repeated for up to 10 credits).
- 441. APPLIED DYEING THEORY (4). Pr., TE 341. Dye fiber bonding; thermodynamics and kinetics of dyeing.
- 490. UNDERGRADUATE RESEARCH I (3). Pr., senior standing. Initial quarter of an undergraduate research sequence.
- 491. UNDERGRADUATE RESEARCH II (3). Pr., TC 490 or TT 479. Conclusion of an undergraduate research sequence. (May be taken more than once with departmental consent.)

ADVANCED UNDERGRADUATE

- 560. TEXTILES FINISHES (4). Pr., TE 341 or departmental approval. Textile finishing processes, machinery and developing technology are covered. Both mechanical and chemical finishing are included. Emphasis is on the theory of application, the mechanism by which the finish works, and its effect on fabric properties.

TEXTILE ENGINEERING (TE)

- 201. INTRODUCTION TO TEXTILE ENGINEERING (3). Emphasizing engineering approaches, including ethical and safety considerations.
- 210. FIBER-TO-YARN ENGINEERING (5). Pr., MH 162 or departmental approval. Engineering aspects of the fiber-to-yarn conversion system.
- 225. FABRIC DESIGN AND MANUFACTURING (5) LEC. 4, LAB. 3. Pr., CSE 120, MH 264, PS 222, TT 211. Engineering design and analysis of woven, knitted, braided and tufted fabric structures. Principles and theories of modern fabric formation techniques.
- 330. TEXTILE TESTING AND ANALYSIS (4). Pr., TE 210, 225. Theory and application of mechanical, physical and chemical measurement of fiber, yarn and fabric properties. Standard test methods. Engineering principles of testing instrumentation.
- 331. STRUCTURE AND PROPERTY OF FIBERS (4). Pr., CH 208. The use of a fiber depends on its properties and these properties in turn depend on the chemical structure and morphology of the fiber. These interrelationships between structure, property and use are explored.
- 332. FIBERS LABORATORY (2). LAB. 6. Coreq., TE 331. A fibers laboratory to accompany TE 331 will include microscopic and chemical techniques of fiber identification and chemical and physical methods useful in the preparation and analysis of fibers.

340. TEXTILE CHEMICAL PROCESSES I (4). LEC. 3, LAB. 3. Pr., TE 331, 332. Principles and processes for bleaching, dyeing and finishing of textile yarns and fibers. Emphasis is on the coloration of textiles, the chemical principles of dyeing and finishing.
341. TEXTILE CHEMICAL PROCESSES II (4). LEC. 3, LAB. 3. Pr., TE 340. Continuation of TE 340 with emphasis on mechanical aspects of dyeing and finishing, quality control and process control.
355. APPLICATION OF NUMERICAL METHODS FOR DESIGN IN TEXTILES (3). LEC. 2, LAB. 3. Pr., TT 211, 221, 270, TE 360. The use of numerical methods in the design of textile materials.
360. MECHANICS OF FLEXIBLE STRUCTURES (5). Pr., MH 265. Analysis of mechanical behavior and physical properties of one and two dimensional flexible structures; such as fibers, yarns and fabrics. The influence of geometrical structure and material properties on the mechanical properties of flexible structures will be undertaken.
409. SPECIAL TOPICS (1-5). Pr., departmental approval. Reading course with varying emphases to give student opportunity for overview in specific areas of textile technology. (May be repeated for up to 10 credits).
425. ENGINEERED TEXTILE STRUCTURES (3). LEC. 3. Pr., TT 211, 221, TE 360. Design, manufacturing, testing and applications of high performance industrial textiles including geotextiles, textiles for architecture/construction, transportation, military/defense, safety/medical and textile structures for composites and paper machine clothing.
450. TEXTILE REINFORCED MATERIALS (3). Pr., TT 221, TE 331, 360. Material properties and manufacturing of textile reinforced materials; weaves and braids preform structures; analysis, design methodology and applications.
460. MECHANICS OF TEXTILE MANUFACTURING PROCESSES AND SYSTEMS (4). LEC. 3, LAB. 3. Pr., EGR 205, 235, TT 211, 221, MH 264. Engineering analysis of mechanisms used in modern textile machinery for production of fibers, yarns and fabrics. Design and operation of these mechanisms and their impact on the products. Production sequences, inter-machine effects, machine design and their consequences on the textile product. Interaction between machine parameters and textile product properties.
489. TEXTILE ENGINEERING DESIGN I (1). Pr., senior standing. Initial quarter of an undergraduate design sequence.
491. TEXTILE ENGINEERING DESIGN II (3). Pr., TE 489. Second quarter of undergraduate design sequence.
492. TEXTILE ENGINEERING DESIGN III (3). Pr., TE 491. Conclusion of undergraduate design sequence. (May be taken more than once with departmental approval.)

ADVANCED UNDERGRADUATE

520. FABRIC FORMATION AND PROPERTIES (4). LEC. 3, LAB. 3. Pr., TE 225, CSE 300, TE 460 or departmental approval. Advanced manufacturing processes of woven, knitted, braided and tufted fabrics; advanced fabric structure, geometry and mechanical properties; recent advances in the theoretical and experimental studies on structural mechanics of fabrics.
525. ADVANCED ENGINEERING FIBROUS STRUCTURES (3). LEC. 3. Pr., CSE 300, TE 425 or departmental approval. Application of advanced technology to the design, development and analysis of high performance industrial textiles.
562. ADVANCED MECHANICS OF FLEXIBLE STRUCTURES (3). Pr., TE 360 or departmental approval. Mechanical behavior of flexible structures, based on the geometrical parameters and properties of their constituent materials.
601. GRADUATE SEMINAR (1). Provides graduate students the opportunity to make presentations and discuss current research in textiles. May be taken for credit up to three times for a total of three hours. S-U graded.
609. SPECIAL TOPICS (1-5). Pr., departmental approval. Reading course designed with varying emphasis to give student opportunity for broad overview in particular areas of textile technology. May be repeated for up to 15 hours credit.
631. STRUCTURES AND PROPERTIES OF POLYMERS (4). Pr., CH 208 or departmental approval. Accelerated course covering the interrelationships between the structure and properties of a polymer and its uses and manufacturing techniques. (Not open to students with credit in TE 431.)
632. POLYMERS LABORATORY (2). LAB. 6. Laboratory exercises in synthesis, fabrication and characterization of polymeric materials. (Not open to students with credit in TE 432.)
641. PHYSICAL CHEMISTRY OF DYEING (5). Pr., TE 341 and CH 507 or departmental approval. The laws of physical chemistry as applied to dye/fiber interactions. Thermodynamics and kinetics of dyeing systems.
650. MECHANICS OF TEXTILE REINFORCED MATERIALS (3). Pr., TE 450. Design methods for textile-reinforced materials, including micro- and macro-mechanics, finite element analysis and homogenization.
690. GRADUATE PROJECTS (1-5). Pr., departmental approval. Project course designed with varying emphasis to give student opportunity for in-depth understanding in a particular area of textile technology. May be repeated for up to 15 hours credit.
699. RESEARCH AND THESIS (CREDIT TO BE ARRANGED.) Required of all students seeking an advanced degree in department.

TEXTILE MANAGEMENT AND TECHNOLOGY (TMT)

200. SURVEY OF TEXTILE TECHNOLOGY (3). Survey of the technology dealing with the manufacture of textiles, including fiber, yarn, fabric and coloration and finishing treatments. (Credit in TT 101, 102 and 103 precludes credit in TMT 200).

212. YARN FORMING SYSTEMS II (3). LEC. 2, LAB. 3. Pr., TT 211. An extension of TT 211. Mechanics of yarns, geometry and properties of yarns as influenced by processing techniques. Both conventional and non-conventional processes are explored.
231. TEXTILE FIBERS I (5). LEC. 4, LAB. 3. Pr., CH 203. Natural and man-made fibers, their production, structure and properties. The relationship between polymeric fibrous materials, end products and utilization.
232. TEXTILES FIBERS II (3). LEC. 2, LAB. 3. Pr., TMT 231. An extension of TMT 231. Provides in-depth analysis of physical and chemical structure and resulting properties of textile fibers. Application of fiber theory to practical manufacturing situations.
241. DYEING AND FINISHING OF TEXTILE MATERIALS (5). LEC. 4, LAB. 3. Coreq., CH 104. Emphasis on principles and techniques to modify textile materials by coloration, additives and surface treatment. The chemistry of these phenomena is studied.
242. CHEMICAL TECHNOLOGY OF BLEACHING, DYEING AND FINISHING (3). LEC. 2, LAB. 3. Pr., TMT 241. Bleaching, dyeing and finishing of fabrics made from natural and man-made fibers; dyes and pigments for textiles, their chemical structure and utility.
320. DEVELOPMENT AND ANALYSIS OF FABRICS (5). LEC. 3, LAB. 6. Pr., TT 221. Design limitations and analysis techniques for primary fabric structures are presented. Students required to reconstruct specifications from samples.
322. NON-CONVENTIONAL FABRIC STRUCTURES (2). Pr., TT 221, TMT 231. Methods of fabric forming other than conventional weaving or knitting are surveyed. More emphasis is placed on specific methods of greater economic significance.
325. DESIGN OF TEXTILE FABRICS (1-5). Pr., departmental approval, junior standing. Individual student projects involving technical fabric drafts for selected fabric types, including woven, knitted and tufted structures. (May be repeated for up to 10 total credits).
352. TEXTILE QUALITY CONTROL (3). Pr., TT 270, 350. Practical application of quality control in the textile industry with emphasis on statistical control techniques. Topics include measures of variation, statistical quality control charts, sample size, confidence interval, significance testing, correlation and analysis of variance.
409. SPECIAL TOPICS (1-5). Pr., departmental approval. Reading course with varying emphases to give student opportunity for overview in specific areas of textile technology. (May be repeated for up to 10 credits).
480. PLANT OPERATION AND COST CONTROL (4). Pr., senior standing. Establishing the criteria and implementation of modification of operations including a plant changeover. The technical requirements, constraints, use of assets and procedure to determine and control manufacturing costs are included.
490. UNDERGRADUATE RESEARCH I (3). Pr., senior standing. Initial quarter of an undergraduate research sequence.
491. UNDERGRADUATE RESEARCH II (3). Pr., TMT 490 or TT 479. Conclusion of an undergraduate research sequence. May be taken more than once with departmental consent.

Theatre (TH)

Professor York

Associate Professors McAdams, Head, Miller, Lockrow, LaRocque and Robinson
Assistant Professors Jaffe and Oleinick

200. INTRODUCTION TO ACTING (3). Exploration of the basic principles and processes of acting through lecture, discussion and concentrated laboratory work.
201. INTRODUCTION TO THE THEATRE (3). Appreciation of theatre arts including stage, television and film. Development of sensitivity and critical sophistication as articulate, discriminating theatregoers. Play and film viewing, play reading, critiques and term projects.
208. INTERVIEW TECHNIQUES FOR THE CAMERA (2). Theory, rehearsal and specialized techniques for interviews in film and television.
209. ACTING: AUDITIONS (1). Pr., TH 200 or departmental approval. Theories, techniques and realities of auditions: preparation of 4-5 pieces.
211. BEGINNING VOICE FOR THE ACTOR I (2). Beginning work in voice in speech with emphasis on standard vowels for theatre speech.
212. INTERMEDIATE VOICE FOR THE ACTOR (2). Pr., TH 211. Exercises to strengthen the work begun in TH 211 with concentration in consonant usage and linkage.
213. ADVANCED VOICE FOR THE ACTOR (2). Pr., TH 212. Continuation of work from the previous two courses with concentration in tonal development.
214. BEGINNING ACTING (3). Pr., TH 200 or departmental approval. Basic performance techniques, utilizing improvisation, theatre games and other exercises to develop creative awareness.
218. MOVEMENT FOR THE ACTOR I (2). Pr., TH 200 or departmental approval. Theory and practice in training the body to serve as a means of communication for the actor.
231. THEATRE TECHNOLOGY I (3). Principles and practice in the planning, drafting of work drawings, construction, painting, rigging and shifting of stage scenery. Practical experience.
232. THEATRE TECHNOLOGY II (4). Pr., TH 231 or departmental approval. Practical application of new materials and techniques in the theatre, including plastics, metals and other non-traditional products.

240. THEATRICAL DESIGN (3). The elements of design used in the creation of theatrical space. Exploration of the fundamental visual design elements and materials with experimentation in their application to theatrical design. Practical utilization of design theory in various visual and theatrical design projects.
261. COSTUME CONSTRUCTION (3). Introduction to sewing skills, basic patterning, fabrics, fibers and dyeing.
265. STAGE MAKEUP (3). Basic principles and practice of stage makeup and makeup design including facial painting and techniques of prosthesis.
270. HONORS INTRODUCTION TO THE THEATRE (3). Pr., approval by the University Honors Program. Appreciation of theatre arts. Development of sensitivity and critical skills as theatregoers. Play attendance, reading, critiques and term projects. For students in the Honors Program.
271. PLAY ANALYSIS (3). How to read a play with an examination of traditional and non-traditional scripts of various periods and genres.
272. DRAMATIC LITERATURE (3). A survey of several periods of playwriting giving a broad overview of many centuries of writing for the theatre. Includes literary, theatrical production and performance values.
281. THEATRE PRODUCTION I (4-8). Pr., departmental approval. Summer. Intensive study of theatre arts through participation in the AU Summer Repertory Theatre.
282. SUMMER REPERTORY THEATRE COMPANY (6-12). Pr., departmental approval. Summer. A concentrated workshop experience in all aspects of theatre production through participation in rehearsal and performance.
284. DANCE TECHNIQUES (2). Practical and theoretical introduction to dance through the study of ballet and jazz dance techniques and the history of contemporary dance personalities, companies and events.
285. BALLET I (2). Pr., TH 284 or departmental approval. A practical and theoretical study of classical ballet at the beginning level, supplemented by study of ballet and general dance history and contemporary dance personalities, companies and events. May be taken once.
286. BALLET II (2). Pr., TH 285 or equivalent. A practical and theoretical study of classical ballet at the advanced beginning/intermediate level, supplemented by a study of ballet and general dance history and contemporary dance personalities, companies and events. May be taken once.
287. JAZZ DANCE (2). Pr., TH 284. A practical and theoretical study of jazz dance at the beginning level, supplemented by study of jazz dance history and contemporary dance personalities, companies and events. May be taken once.
288. TAP (2). Pr., TH 284. Beginning theory and practice in fundamentals and terminology. May be repeated once for credit.
300. THEATRE LABORATORY (1-2). Required of all theatre majors during every quarter of residency; a minimum of six hours required for graduation. Practice in various areas of arts and crafts of theatre, including construction and painting of scenery and properties, stage operation, lighting, sound, costuming, makeup, publicity and business management. Meets weekly for convocation session along with individual laboratory assignments.
306. CHILDREN'S THEATRE (3). Theatre for children, involving an examination of play scripts, acting, and production techniques.
308. ACTING; PERFORMANCE TECHNIQUES FOR THE CAMERA (3). LEC. 2, LAB. 2. Pr., TH 200 or departmental approval. Theory, rehearsal and performance of specialized acting techniques for film and television.
310. ACTING; PRACTICUM (1-2). Open to students cast in Auburn University Theatre productions. May be repeated for credit.
311. STUDIO: VOICE I (2). Pr., departmental approval; B.F.A. degree candidacy required. Structural action on the Lessac system of vocal training.
312. STUDIO: VOICE II (2). Pr., TH 311. Consonant Action in the Lessac system of vocal training.
313. STUDIO: VOICE III (2). Pr., TH 312. Tonal Action in the Lessac system of vocal training.
314. INTERMEDIATE ACTING (3). Pr., TH 214. Theory and techniques of character analysis and development.
315. STUDIO: ACTING I (3). Pr., departmental approval and B.F.A. degree candidacy required. Internal acting process work.
316. STUDIO: ACTING II (3). Pr., TH 315. External acting technique.
317. STUDIO: ACTING III (3). Pr., TH 316. Shakespearean scene study
318. MOVEMENT FOR ACTOR (2). Pr., TH 218, departmental approval. Theory and practice in stage movement with practical experience in mime, stage combat, period dance, movement analysis. May be repeated up to 12 hours.
320. STAGE MANAGEMENT (3). Basic principles of stage management, involving the duties of the stage manager in relation to production and personnel.
321. DIRECTING: FUNDAMENTALS (3). Pr., TH 200, 271 or departmental approval. Theories and techniques of stage direction; analysis of plays; preparation of production plans; practice in stage direction, including open casting and production of at least two scenes before an invited audience.
322. DIRECTING: ADVANCED (4). Pr., TH 321 or departmental approval. Advanced theories and techniques of stage direction; problems of dealing with actors, characterization and style; production of selected scenes and/or one-act play before an invited audience.
331. ADVANCED THEATRE TECHNOLOGY (4). Pr., TH 231 or departmental approval. Practical application of new materials and techniques in the theatre, including traditional painting styles and non-traditional materials and methods.
333. SCENE PAINTING (4). Practical techniques and skills for executing the scenic/visual elements of theatrical designs, including traditional painting styles and non-traditional materials and methods.

335. TECHNICAL DIRECTION/PRODUCTION MANAGEMENT (3). Pr., TH 231 and 232 or departmental approval. Coordination and execution of the technical elements of production from the design period through production opening.
340. RENDERING FOR THEATRICAL DESIGN (4). Pr., TH 240 or departmental approval. Exploration of traditional drawing and rendering techniques to facilitate designer communication in scenic, lighting and costume design. Exercises in handling a variety of artistic media.
341. SCENE DESIGN I (4). Pr., TH 240 or departmental approval. Theory and practice of designing and executing scenery for the stage. Emphasis on traditional styles and methods. Fundamentals of presenting the design idea in perspective rendering and model form.
342. PROPERTY DESIGN (3). Pr., TH 240 or departmental approval. History, theory and practice of designing and executing properties for the stage.
345. DRAFTING FOR THE THEATRE (4). Pr., TH 231 or departmental approval. Comprehensive study of the techniques and methods used in the graphic representation of stage scenery and properties.
351. LIGHTING DESIGN (4). Pr., TH 240 or departmental approval. Principles and practice of stage lighting both as a design and technical medium. Practical production experience in lighting.
352. SOUND DESIGN (4). Pr., TH 231 or departmental approval. Principles and practice of stage sound, both as a design and as a technical medium.
363. COSTUME CONSTRUCTION II (4). Pr., TH 261 or departmental approval. Pattern drafting and draping and their relationship to a costumer's craft.
364. COSTUME DESIGN I (4). Pr., TH 240 or departmental approval. Principles and practice of costume design with emphasis on designing and rendering costumes from various historical periods.
371. HISTORY OF THEATRE I (3). Social, religious, political and artistic forces that have contributed to the development of theatre from its origins through 1660.
372. HISTORY OF THEATRE II (3). Social, religious, political and artistic forces that have contributed to the development of theatre and drama in Western civilization beginning with 1660 and continuing through 1875.
373. HISTORY OF THEATRE III (3). Social, religious, political and artistic forces that have contributed to the development of theatre beginning with 1875 and continuing to the present.
374. COSTUME HISTORY (3). The history of costume from ancient Egypt through the present.
400. PROFESSIONAL INTERNSHIP (1-12). Pr., junior or senior status or departmental approval. Internship with professional or community theatres in the student's general field of specialization. Hours determined in discussion with internship coordinator.
405. THEATRE OPERATIONS/MANAGEMENT (3). Theory and practice of theatre management and arts administration.
409. THEATRE OPERATIONS/MANAGEMENT: SPECIAL PROJECTS (2-4). Pr., departmental approval. Selected projects in theatre management and arts administration.
411. STUDIO: VOICE IV (2). Pr., TH 313. Singing for the actor.
412. STUDIO: VOICE V (2). Pr., TH 411. Dialects for the actor.
413. STUDIO: VOICE VI (2). Pr., TH 412. Theatre speech in various styles of period plays and literature.
414. ACTING: PERIOD SCENE STUDY (3). Pr., TH 314. Theory and performance techniques of pre-20th century plays.
415. STUDIO: ACTING IV (3). Pr., TH 317. Restoration of 18th century scene study.
416. STUDIO: ACTING V (3). Pr., TH 415. Continued scene study from selected styles of literature.
417. STUDIO: ACTING VI (3). Pr., TH 416. Preparation of resumés and monologue material for professional auditions.
419. ACTING: SPECIAL PROJECTS (2-4). Pr., departmental approval. May be repeated to a maximum of eight hours. Selected advanced projects or recitals for public theatre production.
421. DIRECTING: PERIODS (4). Pr., TH 322 or departmental approval. Advanced theories and techniques of stage direction relating to problems of verse and period dramatic literature; production of selected scenes before an invited audience.
429. DIRECTING: SPECIAL PROJECTS (2-4). Pr., departmental approval. May be repeated to a maximum of eight hours. Direction of a long one-act or full length play for public performance.
439. THEATRE TECHNOLOGY: SPECIAL PROJECTS (2-4). Pr., departmental approval. May be repeated to a maximum of eight hours. Selected projects in theatre technology and/or technical direction executed before a public audience.
441. HISTORY OF DESIGN IN THE THEATRE (4). A survey of design elements, including architecture, as practiced in the significant movements in theatre history from the time of the ancient Greeks to the present.
442. SCENE DESIGN II (4). Lec. 3, Lab. 3. Pr., TH 341 or departmental approval. Advanced theory and practice in the use of scenery and light for the theatrical event. Emphasis on experimental and non-traditional design for a variety of theatre spaces.
449. SCENE DESIGN: SPECIAL PROJECTS (2-4). Pr., departmental approval. May be repeated to a maximum of eight hours. Selected projects in scenic design executed before a public audience.
459. LIGHTING DESIGN: SPECIAL PROJECTS (2-4). Pr., departmental approval. May be repeated to a maximum of eight hours. Selected projects in lighting design executed before a public audience.
461. COSTUME CONSTRUCTION III (4). Pr., TH 261 or departmental approval. A practical study of millinery, dyeing and painting of fabric, jewelry and crafts as these relate to the costumer's craft.

University Courses

465. ADVANCED MAKEUP (4). Pr., TH 265 or departmental approval. An in-depth, practical study of makeup design for the stage, including prosthetics, ventilation of hair, masks.
469. COSTUME DESIGN: SPECIAL PROJECTS (2-4). Pr., departmental approval. May be repeated to a maximum of eight hours. Selected projects in costume and/or makeup design executed before a public audience.
471. AMERICAN THEATRE HISTORY I (3). Survey of American theatre and drama from the beginnings to World War I.
472. AMERICAN THEATRE HISTORY II (3). Survey of American theatre and drama from World War I to the present.
475. DRAMATIC THEORY AND CRITICISM (4). Survey and analysis of selected writings on the structure and aesthetic values of both the drama and the theatre.
481. THEATRE PRODUCTION II (4-8). Pr., TH 281 and departmental consent. Summer. Advanced problem-solving in theatre production with emphasis on individual assignment to positions in the repertory theatre.
482. SUMMER REPERTORY THEATRE COMPANY II (6-12). Pr., TH 282 and departmental consent. Summer. An intensive experience in all aspects of theatre production. The advanced student may focus on the development of professional artistic skills.
489. DANCE: SPECIAL PROJECTS (2). Pr., TH 284, 285 or departmental approval. Practical and theoretical study of dance techniques supplemented by a study of general dance history and contemporary personalities, events and companies. May be repeated for a maximum of eight credit hours.
490. HONORS READINGS AND SPECIAL TOPICS (3-6). Pr., admission to University Honors Program; junior or senior standing. May be repeated for a maximum of six hours. Open only to students in the Honors Program with the consent of the Honors Program Advisor.
491. INDEPENDENT STUDY (1-4). Pr., departmental approval and the department head's approval. May be repeated to a maximum of 16 hours. Directed reading, creative and tutorial projects of interest to the advanced student.
498. THEATRE SEMINAR: (various titles to be assigned) (1-8). Pr., departmental approval. May be repeated to a maximum of 16 hours. Intensive study of special theatre topics falling outside the regular theatre offerings. Individual topics announced prior to offering of the course.
499. SENIOR PROJECT (2-4). Pr., departmental approval. Research and production of senior project. Required of all B.F.A. candidates.

University Courses (U)

The following courses, interdisciplinary and experimental in character, enable students to see in a wide perspective the relationships between courses in the curriculum and to understand more fully the dominant ideas and concepts confronting students in the modern world. University Courses are open to students in all curricula.

100. THE AUBURN EXPERIENCE (2). LEC. 2, LAB. 1. Open to freshmen only. Introduction to the university and its resources, assistance in academic performance and transition to college life.
101. SOCIAL SCIENCE: SOCIETY, CULTURE AND THE ENVIRONMENT (3). An interdisciplinary course introducing concepts and processes relating to society, culture and the environment as studied by anthropology, geography and sociology.
102. SOCIAL SCIENCE: POLITICAL ECONOMY (3). The institutional setting of U.S. economy and U.S. political system and interaction between the two.
103. SOCIAL SCIENCE: THE INDIVIDUAL AND SOCIETY (3). An introduction to human action through the study of individual and social psychology.
105. INTRODUCTION TO THE ARTS (3). An introduction to the processes involved in creating, understanding and appreciating the arts, including architecture, visual and plastic arts, dance, music and theatre. Administered by Department of Theatre.
135. COMPUTER LITERACY (2). Comprehensive overview of computers, computer science terminology and computer applications and utilization in work and home settings. This course cannot be applied toward graduation from the College of Business.
171. HONORS SOCIETY, CULTURE AND THE ENVIRONMENT (3). Introduces concepts and processes relating to society, culture and environment as studied by anthropology, geography and sociology.
172. HONORS POLITICAL ECONOMY (3). Pr., membership to University Honors Program. The institutional setting of U.S. economy and political system and the interaction between the two. Seminar format.
173. HONORS THE INDIVIDUAL AND SOCIETY (3). Open to students in the Honors Program.
190. THEORY AND PRACTICUM IN COLLEGIATE SPORTS (1). Conditioning activities in preparation for competitive football. Skills and fundamental techniques of physical activities related to football. Coaching techniques applicable to all areas of athletic competition. S-U graded.
199. PRE-HEALTH PROFESSIONS ORIENTATION (1). Orientation and guidance for all freshmen who are planning to seek admittance to health professions schools such as medicine, dentistry, optometry, physical therapy, pharmacy, occupational therapy, veterinary medicine and podiatry.
- 270-271-272. THE HUMAN ODYSSEY: SCIENCES AND HUMANITIES (3). LEC. 2, LAB. 1. Explores the historic interaction between science and culture. Students assemble weekly to view a film or hear a lecture. Subsequent small classes are devoted to discussion of the film or lecture and auxiliary readings. Limited enrollment. Preference is given to upper division students.

Veterinary Medicine

275. INTERPERSONAL RELATIONS (3). A multi-disciplinary study of methods used by human beings in their interactions that tend to be mutually rewarding. Emphasis is on practical applications within the context of the student's present fields of study and projected fields of work.
277. HONORS LYCEUM (1). Pr., membership in University Honors Program. May be repeated for a maximum of 6 credits. S-U only. Weekly academic lectures followed by discussion and interaction.
- 280-281-282. HONORS HUMAN ODYSSEY (3). LEC. 2, LAB. 1. Explores the historic interaction between science and culture. Students assemble weekly to view a film or hear a lecture. Subsequent small classes are devoted to discussion of the film or lecture and auxiliary readings. Limited enrollment.
305. THE MODEL UNITED NATIONS (1). May be taken more than one quarter for a maximum of 3 credits. S-U only. Preparation of materials for, and active participation in, the sessions of the Model United Nations program held annually on the campus. Administered by Department of Political Science.
390. AUBURN ABROAD (0). Open to sophomores. Enrollment in study abroad/exchange office approved programs world-wide. Must meet individual program requirements and obtain a prior estimate of overseas credit from Auburn University departments and colleges.
399. EXPERIENTIAL LEARNING (2-6). Pr., sophomore standing and departmental approval. May be repeated once for credit. A maximum of 6 credits allowed. Students may obtain academic credit for participation in learning experiences of a practical nature available outside the normal curricular offerings of the University. Normally S-U graded.
400. FRANKLIN SEMINAR IN AMERICAN CULTURE (3-5). Specific topics and lectures presented by distinguished teachers and scholars.
590. AUBURN ABROAD (0). Enrollment in study abroad/exchange office approved programs world-wide. Must meet individual program requirements and obtain a prior estimate of overseas credit from Auburn University departments and colleges.

Veterinary Medicine (VM)

ANATOMY AND HISTOLOGY

Professors Krista, *Head*, Buxton, Kincaid and Rumph
Associate Professors Cartee, Marshall and Morrison

LARGE ANIMAL SURGERY AND MEDICINE

Professors Wolfe, *Head*, Purohit, Powe and Riddell
Associate Professors Baird, Carson, Duran, Humburg, Lin, Pugh, Schumacher and Williams
Assistant Professors DeGraves, Hanson, Love, Navarre, Ruffin and Wenzel
Adjunct Assistant Professor Floyd

PATHOBIOLOGY

Professors Wolfe, *Head*, Baker, Bird, Blagburn, Boosinger, Ewald, Panangala, Spano,
D. Stringfellow and Swango
Adjunct or Affiliate Professors Alley, Glambrone, Klesius, Lauerma, Lindsey and Plumb
Associate Professors Boudreaux, Brunner, Cox, Dykstra, Hendrix, Hoerr, Lenz, Newton,
Nusbaum, Price, Sartin, Van Santen, Weiss, Wels and Wright
Adjunct or Affiliate Associate Professors Barbaree and Dillehay
Assistant Professors Kaltenböck, Rolsma, and B. Smith
Adjunct or Affiliate Assistant Professors D'Andrea, Nuehring, Rowe and Smith-Carr
Instructors Brown, T. Hathcock and J. Stringfellow

PHYSIOLOGY AND PHARMACOLOGY

Professors Krista, *Head*, Branch, Janicki, R. Kemppainen, Moriarty, Sartin and Vodyanov
Adjunct or Affiliate Professors Neil, Blalock, Cole, Dorner, Cummins and Ravis
Associate Professors Braden, B. Kemppainen, Myers and Paxton
Assistant Professors Clark and Schwartz

RADIOLOGY

Professor Bartels, *Head*
Affiliate Professor Marich
Associate Professors Brawner, Cartee, Finn-Bodner, Hathcock and Hudson
Affiliate Assistant Professor Rothchild

SMALL ANIMAL SURGERY AND MEDICINE

Professors Knecht, Head, Angarano, Baker, Braund, Dillon, Hanks, Henderson, Lothrop, Sorjonen, Swaim and D. Whitley

Affiliate Professors Flandry and Hughston

Associate Professors MacDonald, Mansfield, Macintire, McLaughlin, Montgomery, Simpson, Smith-Carr and Steiss

Assistant Professors Brewer, Tillson, Welch and Wohl

Affiliate Assistant Professors Hunt, Savory and Terry

VETERINARY MEDICINE (VM)

Following this section of Veterinary Medicine course descriptions, the remaining VM courses are listed under their alphabetically arranged departments.

300. ORIENTATION (2). Fall. Dynamics of professional responsibilities, duties and privileges of the veterinarian.
313. PHYSIOLOGY I (5). LEC. 5. Fall. Cell and cardiovascular physiology.
314. PHYSIOLOGY II (5). LEC. 5. Winter. Renal and respiratory physiology.
315. PHYSIOLOGY III (5). LEC. 5. LAB. 2. Neuroscience and gastrointestinal physiology.
316. PHYSIOLOGY IV (5). LEC. 5. Winter. Endocrinology and reproduction.
319. PHARMACOLOGY I (5). LEC. 4, LAB. 2. Fall. Introductory pharmacology and CNS drugs.
- 320-321-322. ANATOMY I, II, III (5-5-5). LAB. 10. Fall, Winter, Spring. Gross anatomy of domestic animals. The gross structures of the dog, cat, ox, horse, hog and fowl.
326. MICROSCOPIC ANATOMY I (3). LEC. 1, LAB. 4. Fall. Microscopic anatomy of the form, structure and characteristics of the basic tissues of animals.
327. MICROSCOPIC ANATOMY II (4). LEC. 1, LAB. 6. Pr., VM 326. Winter. Microscopic anatomy of the gastrointestinal, blood, cardiovascular, hemopoietic, integumentary, respiratory and lymphoid systems.
328. MICROSCOPIC ANATOMY III (4). LEC. 2, LAB. 4. Pr., VM 327. Spring. Microscopic anatomy of the urogenital, endocrine, auditory and visual systems as well as placentation.
331. VETERINARY MICROBIOLOGY I (4). LEC. 4. Fall. Veterinary immunology and principles of epidemiology.
401. PHARMACOLOGY II (3). LEC. 2, LAB. 2. Winter. Cardiovascular, renal and gastrointestinal drugs.
402. PHARMACOLOGY III (2). LEC. 2. Spring. Pharmacology of antibacterial drugs.
403. VETERINARY TOXICOLOGY I (3). LEC. 3. Fall. Toxicology-chemicals, venoms.
405. PATHOLOGY I (5). LEC. 4, LAB. 2. Pr., VM 322, 328. Fall. General concepts of pathology, introduction to disease processes affecting animals, laboratory work on gross and microscopic pathological changes.
406. PATHOLOGY II (5). LEC. 4, LAB. 2. Pr., VM 405. Winter. Continuation of VM 405.
407. PATHOLOGY III (4). LEC. 3, LAB. 1. Pr., VM 406. Continuation of VM 406.
408. LABORATORY ANIMAL MEDICINE (3). LEC. 3. Pr., VM 405, 406. Fall. Management, utilization and disease of common laboratory mammals including rats, mice, guinea pigs, hamsters, rabbits and nonhuman primates.
409. VETERINARY PARASITOLOGY I (4). LEC. 3, LAB. 2. Fall. Introduction to parasitology including internal and external parasites of domestic animals.
410. VETERINARY PARASITOLOGY II (4). LEC. 3, LAB. 2. Pr., VM 409. Winter. Continuation of VM 409.
411. VETERINARY MICROBIOLOGY II (5). LEC. 4, LAB. 2. Pr., VM 331. Winter. Bacteriology and mycology.
412. VETERINARY MICROBIOLOGY III (5). LEC. 4, LAB. 2. Pr., VM 331, 411. Spring. Veterinary virology.
413. MICROBIOLOGY IV (4). LEC. 4. Fall. Applied immunology, preventive medicine and zoonoses.
414. L.A. MEDICINE I (5). LEC. 5. Fall. Detailed etiology, symptoms, pathogenesis, diagnosis, treatment and prevention of the medical diseases affecting the various systems and organs of the equine, bovine, ovine and porcine species.
415. INTEGRATED PATHOBIOLOGY (1). A case-based learning format with a pathobiology faculty member as facilitator. Integration of all previous courses into clinical problems. Group interaction, student-directed learning, development of life-long learning skills are goals.
420. L.A. MEDICINE II (5). LEC. 5. Winter. Continuation of VM 414. Includes nutritional deficiency diseases.
421. INTRODUCTION TO VETERINARY SURGERY (3). LEC. 3. Spring. Background of surgery; major surgical injuries-wounds, fluid loss and infection; preoperative and postoperative care; surgical techniques; anesthesia.
422. L.A. SURGERY (3). LEC. 3. Winter. Special surgical diseases of the domestic farm animals including surgery of the alimentary canal, the chest and abdomen, the respiratory and cardiovascular systems, the eye and ear, the genito-urinary tract and the feet and limbs.
423. CLINICAL PATHOLOGY (5). LEC. 5. Pr., VM 407. Spring. Methods for the collection, preservation and examination of various body fluids including blood and urine. Interpretation of results is directed toward clinical diagnosis and prognosis.
424. S.A. MEDICINE & SURGERY II (3). Fall. The diagnostics, medical and surgical treatment of small animals.
425. S.A. MEDICINE & SURGERY III (5). Pr., VM 424. Winter. Continuation of VM 424.
426. CLINICAL PATHOLOGY LABORATORY (1). LAB. 2. Pr., VM 423. Winter. Practical diagnostic laboratory experience in clinical pathology, microbiology and immunology.

427. S.A. MEDICINE & SURGERY I (4). LEC. 4. Spring. The systemic diseases and clinical immunologic procedures in small domestic animals.
428. L.A. PHYSICAL DIAGNOSIS (2). LEC. 1, LAB. 2. Fall. Demonstration and application of principles and techniques of physical diagnosis of large animals.
429. S.A. PHYSICAL DIAGNOSIS (1). LAB. 2. Spring. Demonstration and practice of handling, restraint, physical diagnosis and administration of therapeutic agents related to small animals.
430. VETERINARY JURISPRUDENCE AND ETHICS (2). Winter. Laws relating to the veterinary profession. Professional ethics for the veterinarian.
431. VETERINARY RADIOLOGY (4). LEC. 4. Fall. Basic diagnostic radiology including organ system interpretations, techniques, ultrasound therapy and equipment.
432. MICROBIOLOGY V (3). LEC. 3. Pr., VM 411. Winter. Principles of public health and methodology of food hygiene.
433. AVIAN DISEASES (4). LEC. 4. Winter. Diagnosis, prevention and treatment of poultry diseases and the most common diseases of caged, zoo and wild birds.
435. THERIOGENOLOGY (5). LEC. 5. Spring. Clinical application of the physiology of reproduction, causes and correction of dystocia, genital examinations and infertility of the male and female.
436. SPECIAL ANATOMY (1-5). (HOURS AND CREDIT TO BE ARRANGED). Pr., VM 320. Elective course in which any phase of anatomy of domestic animals to the anticipated field on specialization may be studied.
437. VETERINARY TOXICOLOGY II (3). Summer. Identification and study of selected poisonous plants of the U.S. To include characteristic signs, lesions, methods of diagnosis and treatment.
- 438-439. L.A. MEDICINE III, IV (2-5). Summer, Fall. Principal infectious diseases of large domestic animals. Epizootiology, etiology, clinical signs, diagnosis and diseases control including immunization and sanitation.
- 440-441-442-443. S.A. CLINICS I, II, III, IV (7-7-7-7). Conferences, laboratory exercises and practice in diagnosis, control and therapy of diseases of small animals.
- 444-445-446-447. L.A. CLINICS AND LARGE ANIMAL SURGERY AND THERIOGENOLOGICAL EXERCISES I, II, III, IV, (7-7-7-5). LAB. (12-18-17-18). Conferences, lab exercises and practice in diagnosis, control and therapy of diseases and surgical procedures for large domestic animals.
448. S.A. SURGERY PRACTICUM I (2). LAB. 4. Fall. Introductory and detailed consideration and performance of small animal surgery.
449. S.A. SURGERY PRACTICUM II (2). LAB. 4. Pr., VM 428, 448. Winter. Detailed consideration and performance of small animal surgery continued.
450. CLINICOPATHOLOGIC CONFERENCE (0). Pr., enrollment in the College of Veterinary Medicine. Oral presentation of veterinary clinical case or case material. Fifteen to 20 minutes in length with a few minutes for questions from the audience to be answered.
453. PRACTICE MANAGEMENT (2). LEC. 2. Winter. Fundamental principles of effective client, personnel, practice and business management for the veterinarian. S-U graded.
454. PRECEPTORSHIP (0). NON-CREDIT REQUIRED COURSE. Spring. Completion of satisfactory preceptorship during the spring quarter is required for graduation.
455. ETHOLOGY (1). LEC. 1, Winter. Animal behavior.
456. APPLIED ANATOMY (1). LAB. 2. Pr., VM 322. Provides an in depth anatomical basis of practical application of local and regional anesthesia in the horse. Diagnostic and therapeutic anesthesia are included.
457. APPLIED SURGICAL ANATOMY I (1). LAB. 2. Pr., VM 320. Provides a detailed anatomical study of typical small animal orthopedic surgical approaches.
458. APPLIED SURGICAL ANATOMY II (1). LAB. 2. Pr., VM 320. Provides a detailed anatomical basis for surgical treatment of soft tissue in small animals. Thoracic, abdominal, pelvic and head topography.
459. EQUINE FOOT ANATOMY (2). LAB. 4. Pr., VM 322. Provides a detailed microscopic and gross study of the equine foot. Students will be provided the opportunity to study the gross microscopic and radiographic structure. Related to the living, normal and diseased animal.
460. EQUINE LIMB ANATOMY (2). LAB. 4. Pr., VM 322. Provides a detailed study of the equine fore and hind limb, emphasizing joints, synovial sacs, ligaments, tendons, bones, nerve and blood supply. Relates structure to functional aspects, including both normal and abnormal.
461. ULTRASONOGRAPHY (1). LAB. 2. Pr., VM 320. Principles and practice of veterinary diagnostic ultrasonography in evaluating normal and abnormal anatomy of domestic animals. All modes of ultrasonography are utilized.
462. INTRODUCTORY NEUROANATOMY (2). LAB. 2. Pr., VM 320. Overview of the functional morphology of the central nervous system. Initial emphasis on the input-output segments of brain stem and spinal cord. Subsequently, long-tract relations of sensory and motor systems will be integrated with these input-output segments.
463. ADVANCED VETERINARY APPLICATIONS (4). Pr., VM 443 and 447. Winter. Required elective basic and clinical rotations.
464. ADVANCED CLINICAL OPHTHALMOLOGY (1). LEC. 1. Pr., VM 443 and 447. Winter. Diagnosis and therapy of ophthalmic diseases in animal species. S-U graded.
465. SMALL ANIMAL WOUND MANAGEMENT AND RECONSTRUCTIVE SURGERY (1). LEC. 1. Pr., VM 443 and 447. Winter. Management of various wounds and the reconstructive/salvage surgical techniques for these wounds. S-U graded.
466. ADVANCED SMALL ANIMAL ONCOLOGY (2). LEC. 2. Pr., VM 443 and 447. Winter. Current diagnostic and therapeutic methods used in small animal oncology. S-U graded.

467. VETERINARY EMERGENCY MEDICINE AND CRITICAL CARE (1). LEC. 1. Pr., VM 443 and 447. Winter. Problem-oriented approach to the diagnosis, therapeutic management and monetary considerations in the acute and or critical veterinary patient. S-U graded.
468. ADVANCED SMALL ANIMAL ORTHOPEDICS (2). LEC. 2. Pr., VM 424. Winter. Advanced orthopedic techniques and comprehensive discussion of conditions not covered in VM 424.
469. CYTOLOGIC INTERPRETATION (1). Pr., enrollment in College of Veterinary Medicine. Examine cytologic samples from various tissues and lesions of normal from abnormal tissue for differentiation.
470. USE OF IN-OFFICE CHEMISTRY AND HEMATOLOGY INSTRUMENTS (1). Pr., enrollment in College of Veterinary Medicine. Use of in-office instruments for chemistry and hemotologic analysis.
471. HEMATOSTASIS (1). Pr., enrollment in College of Veterinary Medicine, fourth-year standing. Review of mechanisms of blood coagulation, fibrinolysis and antithrombosis, as well as platelet physiology.
472. CAGE BIRD PRACTICE (1). Pr., enrollment in College of Veterinary Medicine. Review of cage bird diseases and basic techniques needed for pet bird practice.
473. ADVANCED CLINICAL DERMATOLOGY (1). Pr., VM 427. Clinical dermatology in a case-based format.
475. LARGE ANIMAL OPERATIVE SURGERY, BASIC (1). LEC. 1. Pr., VM 443 and 447. Winter. Operative surgery in the large animal.
476. LARGE ANIMAL OPERATIVE SURGERY, HOSPITAL (1). LEC. 1. Pr., VM 443 and 447. Winter. Large animal surgery that requires hospitalization.
477. EQUINE LAMENESS (1). LEC. 1. Pr., VM 443 and 447. Winter. Diagnosis and management of equine lameness.
478. PROBLEM-BASED DIAGNOSTICS IN FOOD ANIMALS (2). LEC. 2. Pr., VM 443 and 447. Winter. Review of problem-oriented diagnosis in food animals.
479. VETERINARY ANESTHESIA AND INTENSIVE CARE (1). LEC. 1. Pr., VM 443 and 447. Winter. Topics in veterinary anesthesia and intensive care.
480. APPLIED SMALL ANIMAL NEUROLOGY (1). Pr., senior standing in veterinary medicine, VM 440-442. Winter. Clinical management of commonly occurring neurologic diseases of small domestic animals.
485. LARGE ANIMAL RADIOLOGY (1). LEC. 1. Pr., VM 443 and 447. Winter. Radiology techniques and diagnosis in large animal disease with emphasis on equine lameness.
486. VETERINARY CLINICAL ENDOCRINOLOGY (1). LEC. 1. Pr., VM 316 or equivalent and departmental approval. Winter, even years. Current methods used in the diagnosis and treatment of endocrine disease of importance in veterinary species. Emphasis on current recommendations for diagnosis and therapy as well as the pathophysiology of each disorder. S-U graded.

ANATOMY AND HISTOLOGY (VAH)

ADVANCED UNDERGRADUATE AND GRADUATE

- 520-521-522. ANATOMY I, II, III (5-5-5). LEC. 2, LAB. 10. Pr., departmental approval. Fall, Winter, Spring. Gross anatomy of domestic animals. A comparative study of the gross structures of the dog, cat, horse, hog, fowl, laboratory animals and zoo animals.
526. MICROSCOPIC ANATOMY I (5). LEC. 2, LAB. 6. Pr., departmental approval. Fall. Microscopic anatomy of the form, structure and characteristics of the basic tissues of animals.
527. MICROSCOPIC ANATOMY II (5). LEC. 2, LAB. 6. Pr., departmental approval. Winter. Microscopic anatomy of the tissue composition of organs and organ systems.
528. MICROSCOPIC ANATOMY III (4). LEC. 2, LAB. 4. Pr., departmental approval. Spring. Microscopic anatomy of the reproductive organs. Formation and early development of the embryos of domestic animals. Fetal membranes and placentation are emphasized.
570. HISTOLOGICAL TECHNIQUES (2-5). Departmental approval. Quarter by arrangement. Detailed techniques employed in the preparation of cytological and histological materials.

COURSES FOR GRADUATE STUDENTS

622. A COMPARATIVE STUDY OF THE UROGENITAL SYSTEM IN ANIMALS (5). LEC. 2, LAB. 9. Pr., departmental approval. Summer, even years. A comparative study of the urogenital system of domestic animals.
623. NEUROANATOMY I (5). LEC. 4, LAB. 2. Pr., departmental approval. Fall, even years. Functional morphology of the basic input-output regions of the central nervous system (brain, brain stem, spinal cord) and its relation to peripheral nerves and their receptor/effector organs.
624. NEUROANATOMY II (5). LEC. 4, LAB. 2. Pr., departmental approval. Winter, odd years. Functional morphology of the sensory and motor systems of the brain and brain stem related to basic input/output organization. Special senses encompassed from receptor to cortical termination. Limbic system relations to endocrine and autonomic nervous systems included. Comparative approach among primates and domestic animals.
625. ANATOMY OF THE LOCOMOTOR SYSTEM (5). LEC. 2, LAB. 9. Pr., departmental approval. Quarter by arrangement. Dissection and study of the structures of the locomotor system. The horse is utilized as the primary model.
626. ANATOMY OF THE SPECIAL SENSES (5). LEC. 2, LAB. 9. Pr., departmental approval. Winter, even years. Taste, smell, sight and hearing. Macroscopic and microscopic specimens are utilized to correlate structure and function.

627. ADVANCED MICROSCOPIC ANATOMY I (5). LEC. 2, LAB. 6. Pr., departmental approval. Quarter by arrangement. A detailed study of the basic tissues. The light microscope and electron micrographs are utilized to interpret morphology.
628. ADVANCED MICROSCOPIC ANATOMY II (5). LEC. 2, LAB. 6. Pr., departmental approval. Quarter by arrangement. Light microscopic and electron microscopic study of cardiovascular, hemopoietic, respiratory, digestive and visual organs of domestic animals.
629. ADVANCED MICROSCOPIC ANATOMY III (5). LEC. 2, LAB. 6. Pr., departmental approval. Quarter by arrangement. Light microscopic and electron microscopic study of reproductive, endocrine organs, urinary system, integument and auditory apparatus of domestic animals.
630. NEUROANATOMY OF LOCOMOTION (5). LEC. 5. Pr., VM 623, 624, departmental approval. Fall, odd years. Patterns of movement, functional morphology of pertinent peripheral receptor/effector organs, spinal locomotor pattern generators, peripheral and supraspinal influences affecting pattern generators. Emphasis on quadrupedal mammals.
631. BIOLOGY OF THE SKELETON (5). LEC. 5. Pr., ADS 618 or equivalent. Spring, odd years. Structure, physiology and mechanics of bone, as a tissue and organ, and joints are studied as they relate to the function of the skeleton.
688. VETERINARY MEDICAL DIAGNOSTIC ULTRASONOGRAPHY (5). LEC. 2, LAB. 6. Pr., departmental approval. Veterinary students or graduate students with D.V.M. Quarter by arrangement. The principles and practice of veterinary diagnostic ultrasonography as they are utilized in evaluating normal and abnormal anatomy of animals. All modes of ultrasonography are utilized in the course.
696. SEMINAR (1). Quarter by arrangement. Required of all graduate students who major in Veterinary Anatomy and Histology.
698. RESEARCH PROBLEMS (2-5). Quarter and credit by arrangement.
699. RESEARCH AND THESIS Quarter and credit by arrangement
799. RESEARCH AND DISSERTATION (CREDIT TO BE ARRANGED.)

LARGE ANIMAL SURGERY AND MEDICINE (VLA)

COURSES FOR GRADUATE STUDENTS

651. ADVANCED LARGE ANIMAL UROGENITAL SURGERY* (5). LEC 1, LAB. 8. Summer, even years. Research in surgery. Advanced techniques for urogenital surgical procedures in large domestic animals.
652. ADVANCED LARGE ANIMAL SOFT TISSUE SURGERY* (5). LEC 1, LAB. 8. Fall, even years. Research in surgery. Advanced techniques for soft tissue surgical procedures in large domestic animals.
653. ADVANCED LARGE ANIMAL ORTHOPEDIC SURGERY* (5). LEC 1, LAB. 8. Winter, even years. Research in surgery. Advanced techniques for orthopedic surgical procedures in large domestic animals.
654. ADVANCED FOOD ANIMAL MEDICINE* (5). LEC. 3, LAB. 4. Winter, even years. An advanced study of principles of clinical medicine with emphasis on causes, methods of metabolic and infectious diseases of bovine, sheep, goat and swine.
655. ADVANCED EQUINE MEDICINE* (5). LEC. 3, LAB. 4. Spring, even years. Special study with emphasis on metabolic, musculoskeletal, and infectious diseases of equine.
657. GYNECOLOGY OF LARGE DOMESTIC ANIMALS (5). Fall, even years. Special study of functional and infectious conditions affecting female reproduction.
658. ANDROLOGY OF LARGE DOMESTIC ANIMALS (5). Winter, odd years. Special study of functional and infectious conditions affecting breeding sires.
659. ADVANCED VETERINARY ANESTHESIOLOGY* (5). LEC. 3, LAB. 4. Pr., departmental approval and graduate standing. Summer, odd years. An advanced study of anesthetic principles and uses of various anesthetic agents in veterinary medicine with emphasis on clinical monitoring of physiological parameters and intensive care of critical patients.
660. HEALTH MAINTENANCE OF FOOD ANIMALS (5). LEC. 5. Pr., graduate standing and departmental approval. Spring, odd years. An advanced study of the principles of health maintenance of food and fiber animals emphasizing sustenance of the health state rather than the employment of restorative or preventive medicine.
696. SEMINAR (1). Required of all graduate students in Large Animal Surgery and Medicine. Meets at scheduled intervals each year.
698. RESEARCH PROBLEMS (2-5) (CREDIT TO BE ARRANGED.)
699. RESEARCH AND THESIS (CREDIT TO BE ARRANGED.)
799. RESEARCH AND DISSERTATION (CREDIT TO BE ARRANGED.)

PATHOBIOLOGY (VPB)

418. INTRODUCTION TO THE GREAT PLAGUES (1). LEC. 1. Winter. An attempt to understand why plagues are propagated and what effect plagues have and have had on our society and on our culture.
500. RESEARCH PROBLEMS IN MOLECULAR BIOLOGY (2-5). Any quarter by arrangement. Research problem in molecular biology under supervision of departmental faculty.
502. ADVANCED TECHNIQUES IN POPULATION MEDICINE AND DISEASE OUTBREAK INVESTIGATION (2). LEC. 2. Pr., VM 443 and 447. Winter. Advanced methods for evaluating health and disease in populations with techniques for disease outbreak investigation.

503. WILDLIFE DISEASES (3). LEC. 3. Pr., VM 443 and 447. Fall. Basic information related to infectious and parasitic diseases of wildlife and their zoonotic and epidemiologic importance to wildlife management.
510. ADVANCED REPRODUCTIVE TECHNIQUES (3). LEC. 3. Pr., ADS 361 or VM 316 or equivalents. Winter. Techniques associated with embryo transfer, in vitro fertilization and intrafallopian gamete transfer. Emphasis on applied and experimental use of techniques in cattle.
598. RESEARCH PROBLEMS IN PATHOBIOLOGY (2-5). Pr., departmental approval. Quarter and credit by arrangement. Research problems, under supervision of departmental faculty, in a variety of specialized disciplines. S-U grading only.

COURSES FOR GRADUATE STUDENTS

601. DETERMINATIVE VETERINARY BACTERIOLOGY (5). LEC. 3, LAB. 4. Pr., departmental approval. Quarter by arrangement. Identification, classification, nomenclature, distribution and systematic relationship of bacteria of veterinary significance.
602. BACTERIAL PATHOGENESIS (5). LEC. 5. Pr., MB 522 and departmental approval. Spring, even years. Molecular and cellular basis of virulence of bacterial pathogens of animals. Host-bacterium interactions, mechanism of action of bacterial toxins and coordinate regulation of expression of virulence determinants.
607. PATHOGENESIS OF VIRUS DISEASES OF ANIMALS (5). LEC. 5. Pr., departmental approval. Fall, even years. How animal viruses produce disease in their hosts. Various well-studied models are used to demonstrate current theories and knowledge of pathogenetic mechanisms of virus-induced neurological diseases, enteric diseases, respiratory diseases, immune-complex diseases and neoplastic diseases.
608. ADVANCED EPIDEMIOLOGY (5). LEC. 4, LAB. 2. Pr., departmental approval. Spring, even years. Advanced techniques in epidemiological investigation and their application to disease research and disease outbreak investigations. Use of Epi-Info software for entry and analysis of epidemiology data is stressed.
612. METHODS IN IMMUNOLOGY (5). LEC. 1, LAB. 8. Pr., departmental approval. Fall, even years. Advanced technology in the areas of immunobiology, immunochemistry and immunopathology is offered. Requires the formulation of a hypothesis, a literature search, utilization of at least three different immunologic techniques to solve the problem and writing a paper, in journal style, to report the results of the problem-solving exercise.
614. DIAGNOSTIC TECHNIQUES IN VETERINARY MICROBIOLOGY (5). LEC. 1, LAB. 4. Pr., departmental approval. Quarter by arrangement. Acquaints advanced microbiology students with techniques used in the modern microbiological diagnostic laboratory.
615. ADVANCED IMMUNOLOGY (3). Pr., MB 543 or equivalent, or departmental approval. Spring. Provides an opportunity to examine and analyze the current literature in immunobiology. The focus is on cell biology, biochemistry and molecular biology of the immune response. Topics are addressed from an experimental standpoint with emphasis on understanding approach and interpretation in answering questions related to the biochemical and molecular basis of the immune response.
620. PROKARYOTIC MOLECULAR GENETICS (5). LEC. 4, DISC. 1. Pr., ZY 300, MB 300 or equivalent. Fall. Bacterial and bacteriophage genetics from a historical perspective.
621. EUKARYOTIC MOLECULAR GENETICS (5). LEC. 3, DISC. 2. Pr., ZY 310, VPB 620 or equivalent. Winter. Gene structure and molecular mechanisms regulating expression. Mendelian and non-Mendelian mechanisms of inheritance will be discussed and current literature emphasized.
622. MOLECULAR MECHANISMS IN CELL AND DEVELOPMENTAL BIOLOGY (5). LEC. 3, DISC. 2. Pr., VPB 621 or equivalents. Spring. The mechanisms by which eukaryotic cells survive, replicate, communicate and differentiate. Current literature will supplement the lecture material.
631. VETERINARY BACTERIOLOGY (5). LEC. 4, LAB. 2. Pr., departmental approval. Winter. Bacteriology and mycology of veterinary pathogens. Lecture same as VM 411.
632. VETERINARY MICROBIOLOGY III (5). LEC. 4, LAB. 3. Pr., departmental approval. Spring. Studies of animal viruses and associated diseases, pathogenesis of viral oncology and host responses to viral infections and tumors. Chlamydia and rickettsia are considered briefly. Lecture same as VM 412.
638. EXPERIMENTAL TECHNIQUES IN CELLULAR AND MOLECULAR BIOLOGY (5). LEC. 2, LAB. 6. Pr., departmental approval. Summer, even years; Fall, odd years. Introduction to theoretical and practical fundamentals of techniques common to cellular and molecular biology. Topics include: tissue culture; virological, bacteriological, immunological, histological and immunocytochemical methods; microscopy; embryo collection and culture; transgenic organisms; radioisotope handling/quantification; receptor binding; chromatography; ultracentrifugation; Southern, Northern and Western blotting analyses; DNA synthesis; DNA sequencing.
639. CURRENT TOPICS IN MOLECULAR VIROLOGY (3). LEC. 3. Pr., VPB 632 or MB 542 or equivalent, MB 522 or equivalent and departmental approval. Winter, even years. Concentrates on strategies of regulation of viral gene expression, with emphasis on herpesviruses and human immunodeficiency virus. Other topics depend on current literature and student interest. Emphasis on understanding the experimental approaches used to answer questions and how experimental results have led to conclusions.
641. PATHOLOGY (2-5). LEC. 2, LAB. 9. Pr., D.V.M. degree or equivalent and departmental approval. May be taken more than one quarter for a maximum of 10 credits in M.S. program or 20 credits in Ph.D. program. Any quarter by arrangement. Mechanisms of response in domestic animals to diseases, the description and recognition of lesions and other topics to meet the particular needs of students.
642. GENERAL PATHOLOGY (5). LEC. 4, LAB. 2. Pr., satisfactory courses in histology and physiology and departmental approval. Fall. Fundamental alterations of disease.

643. GROSS PATHOLOGY (2). LAB. 6. Pr., VM 405 or VPB 642 and departmental approval. Any quarter by arrangement. Regular participation in necropsy examinations under supervision of senior staff members. Gives the student experience in necropsy procedures and in diagnostic-interpretation of gross lesions.
644. DIAGNOSTIC PATHOLOGY (2-5). Limited to graduate students and residents in pathology. Any quarter by arrangement. The diagnosis of animal diseases using necropsy procedures and histopathologic examination of tissue sections. Work will be done under the supervision of a senior pathologist.
645. SURGICAL PATHOLOGY (1-3). Limited to graduate students and residents in pathology. Any quarter by arrangement. The histopathologic diagnosis of surgical biopsy specimens. Work will be under supervision of a senior pathologist.
646. SPECIAL TECHNIQUES IN HISTOPATHOLOGY (3). LEC. 1, LAB. 4. Pr., departmental approval. Summer, odd years. Special stains and techniques of histochemistry employed in the preparation of materials for histopathologic study.
647. AVIAN PATHOLOGY (5). LEC. 3, LAB. 4. Pr., VM 405 or VPB 642. Spring, even years. Gross, microscopic, ultrastructural and biochemical pathology of diseases in poultry, psittacines, waterfowl, raptors and other avian species.
650. ADVANCED CLINICAL PATHOLOGY I (5). LEC. 5. Pr., VM 423 or equivalent. Fall, odd years. A comprehensive evaluation of diseases altering the lymphohematopoietic system.
651. ADVANCED CLINICAL PATHOLOGY II (5). LEC. 5. Pr., VM 423 or equivalent. Winter, even years. The concepts relating modern laboratory investigations to disease pattern recognition.
653. DIAGNOSTIC ONCOLOGY (5). LEC. 1, LAB. 8. Pr., D.V.M. degree or equivalent, departmental approval. Any quarter by arrangement. Gross and microscopic pathology of neoplasms of domestic animals.
654. CLINICAL ONCOLOGY (5). LEC. 5. Spring, odd years. Concepts useful in the diagnosis and treatment of neoplastic diseases.
658. MECHANISMS OF TOXICOLOGIC DISEASE (5). LEC. 4, LAB. 2. Pr., basic knowledge of mammalian physiology and biochemistry and departmental approval. Fall, even years. Pathophysiology involved in the development of animal disease associated with environmental and naturally occurring toxicants, morphologic implications, opportunity to select clinical, pathological or analytical aspects of toxicology for laboratory assignments.
660. MECHANISMS OF DISEASE (5). Pr., DVM or VM 642. Summer, odd years. Concepts of fundamental pathophysiological mechanisms of disease.
670. VETERINARY PROTOZOOLOGY AND ENTOMOLOGY (5). LEC. 3, LAB. 4. Pr., VM 410 or ZY 511 and departmental approval. Spring, odd years. Pathogenesis, diagnosis, therapy and other topics relating to selected diseases of veterinary importance caused by protozoan and arthropod parasites.
674. VETERINARY HELMINTHOLOGY (5). LEC. 3, LAB. 4. Pr., VM 410 or ZY 511 or equivalent and departmental approval. Summer, even years. Pathogenesis, diagnosis, therapy and other topics relating to selected diseases of veterinary importance caused by helminth parasites.
678. PATHOLOGY OF PARASITIC DISEASES (5). LEC. 2, LAB. 6. Pr., VPB 642 and departmental approval. Spring, even years. Gross and microscopic pathology of parasitic diseases of veterinary importance.
690. PATHOLOGY SEMINAR (1). Limited to graduate students and residents in pathology. Weekly conference to discuss diagnostic material. Required participation by all graduate students and residents in pathology.
696. SEMINAR (1). Forum for critical review of current scientific literature.
698. RESEARCH PROBLEMS (2-5). Pr., departmental approval. Quarter and credit by arrangement. Research problems, under the supervision of departmental faculty, in a variety of specialized clinical, diagnostic and basic research disciplines. (A). Diagnostic/Clinical Immunology; (B). Immunohistochemistry/Monoclonal Antibodies; (C). Immunobiology of Herpesvirus Infections; (D). Immunofluorescence/Tissue Culture; (E). Immunoparasitology; (F). Diagnostic Microbiology/Immunology; (G). Cellular/Microbial Immunology and Immunohistochemistry; (J). Viral Pathogenesis; (K). Clinical and Basic Virology/Serology; (L). Small Animal Virology; (P). Molecular Genetics; (Q). Culture and Biology of Mycoplasma; (R). Ova Transfer/Cell Culture and Disease; (S). Epidemiology/Public Health; (T). Avian Medicine; (U). Eukaryotic Cell Biology; (V). Bacteriology; (W). Clinical Bacteriology; (X). Topics in Anatomic Pathology, Clinical Pathology, Parasitology, Oncology or Neuropathology.
699. RESEARCH AND THESIS. Quarter and credit by arrangement.

PHYSIOLOGY AND PHARMACOLOGY (VPH)

501. PHARMACOLOGY II (3). LEC. 2, LAB. 2. Winter. Cardiovascular, renal and digestive drugs.
502. PHARMACOLOGY III (2). LEC. 2, Spring. Pharmacology of antibacterial drugs.
503. EXOTIC ANIMAL PHARMACOLOGY (2). LEC. 2. Pr., VM 443 and 447. Winter. Drug use in pet birds, reptiles and zoo animals.
513. PHYSIOLOGY I (5). LEC. 5. Fall. Cell physiology and neuroscience.
514. PHYSIOLOGY II (5). LEC. 5. Winter. Respiratory and cardiovascular physiology.
515. PHYSIOLOGY III (5). LEC. 4, LAB. 2. Spring. Physiology of kidney, liver and digestive systems.
516. PHYSIOLOGY IV (5). LEC. 5. Winter. Endocrinology, reproduction and integrative physiology.
519. PHARMACOLOGY I (5). LEC. 4, LAB. 2. Fall. Drugs acting on the central nervous system.
595. SPECIAL PROBLEMS (1-5). LAB. 1-5. Pr., acceptable courses in biochemistry and physiology, departmental approval. Individualized research in modern biochemistry, physiology, pharmacology or toxicology from a cellular to a whole animal basis. Students participate in designing, conducting and reporting results of original research.

COURSES FOR GRADUATE STUDENTS

605. RESPIRATORY PHYSIOLOGY (5). LEC. 5. Fall. Detailed study of respiratory physiology and the physiological aspects of environmental adaptations.
630. FUNGAL TOXINS (3). LEC. 3. Pr., acceptable courses in biochemistry and physiology and departmental approval. Winter, even years. Biology and epidemiology of fungi involved with diseases caused by fungal toxins. Methods to detect fungal toxins, adverse health effects in diverse animal species, regulatory aspects and control strategies for mycotoxin-contaminated agricultural products.
631. ADVANCED RENAL AND HEPATIC PHYSIOLOGY (5). LEC. 5. Summer. Physiology of the liver and kidney and the effects that certain disease processes have on these organs.
632. ADVANCED ENDOCRINOLOGY (5). LEC. 5. Fall. Pr., ZY 561, CH 519. Physiological regulation of endocrine glands and the synthesis, secretion and action of the hormones. Emphasis will be placed on the metabolic regulatory hormones.
633. NEUROSCIENCES (5). LEC. 5. Winter, odd years. Pr., departmental approval. Multidisciplinary approach to the nervous system. Emphasis on central nervous system physiology.
634. VETERINARY CLINICAL PHARMACOLOGY (5). LEC. 4, LAB. 2. Pr., D.V.M. or equivalent degree or departmental approval. Summer, even years or by arrangement. Applied pharmacokinetics, influence of disease on drug disposition, the development of dosage regimens and drug assay methodology. Labs include techniques in drug assay by RIA, HPLC, microbiological and other methods.
637. VETERINARY ANTIMICROBIAL THERAPEUTICS (5). LEC. 5. Pr., departmental approval and acceptable course in pharmacology or a D.V.M. or equivalent degree. By arrangement. Provides current in-depth information on the pharmacology of drugs used in the treatment of infectious diseases of veterinary interest.
645. CARDIOLOGY (5). Spring. Physiology of the heart and the advanced techniques used in electrocardiology.
646. PHYSIOLOGICAL NEUROCHEMISTRY (5). LEC. 4, LAB. 2. Pr., departmental approval and adequate courses in biochemistry or neurophysiology. Spring, odd years or by arrangement. Detailed study of the molecular mechanisms associated with neuronal function. Emphasis is on the biochemistry of synaptic transmission and physiological integration of the brain and spinal cord.
647. MEMBRANE PHYSIOLOGY (5). LEC. 2, LAB. 6. Pr., departmental approval. Spring, odd years. The classic and modern aspects of biological membranes and the techniques used to demonstrate them. Labs include patch clamp, reconstruction of ion channels in bilayers and other methods.
696. SEMINAR (1). Required of all graduate students in this department.
698. RESEARCH PROBLEMS (2-5) (CREDIT TO BE ARRANGED.)
699. RESEARCH AND THESIS (CREDIT TO BE ARRANGED.)
734. MOLECULAR ENDOCRINOLOGY (3). LEC. 3. Pr., VPH 632, CH 519. Summer, odd years. Examination of the literature of hormonal synthesis, secretion and mechanism of action with emphasis on receptors, second messenger systems and gene regulation.

RADIOLOGY (VR)

COURSES FOR GRADUATE STUDENTS

667. NORMAL RADIOLOGICAL ANATOMY (5). LEC. 4, LAB. 2. Any quarter by arrangement. A detailed study of the normal structure, size and position of the various organs as they appear on plain and contrast radiographs.
668. ADVANCED RADIOLOGY* (5). LEC. 1, LAB. 8. Any quarter by arrangement. A detailed study of advanced radiographic techniques and alternate imaging.
669. RADIOLOGICAL INTERPRETATIONS* (5). LEC. 1, LAB. 8. Any quarter by arrangement.
680. RADIOLOGICAL TECHNIQUES* (5). LEC. 3, LAB. 4. Any quarter by arrangement. A detailed study of radiographic techniques including assignments on basic radiation physics.
696. SEMINAR (1). Required of all graduate students in Veterinary Medicine. Meets by arrangement during final quarter in Graduate School.
698. RESEARCH PROBLEMS (2-5) (CREDIT TO BE ARRANGED.)
699. RESEARCH AND THESIS (CREDIT TO BE ARRANGED.)

SMALL ANIMAL SURGERY AND MEDICINE (VSA)

COURSES FOR GRADUATE STUDENTS

647. CANINE NEUROSURGERY (5). LEC. 2, LAB. 6. Pr., departmental approval. Quarter by arrangement. Applied anatomy, physiology, physical and radiographic diagnosis and surgical correction of lesions affecting the nervous system of the dog.
659. ADVANCED VETERINARY ANESTHESIOLOGY (5). LEC. 3, LAB. 4. Pr., departmental approval. Quarter by arrangement. Advanced anesthetic principles and uses of various anesthetic agents in veterinary medicine with emphasis on clinical monitoring of physiological parameters and intensive care of critical patients.
660. ADVANCED SMALL ANIMAL SURGERY (5). LEC. 3, LAB. 6. Quarter by arrangement. Techniques in general small animal surgery.
661. RECONSTRUCTIVE SURGERY (5). LEC. 2, LAB. 6. Quarter by arrangement. Techniques in reconstructive surgery in small and large animals.
662. ADVANCED SMALL ANIMAL ORTHOPEDIC SURGERY (5). LEC. 3, LAB. 6. Quarter by arrangement. New techniques in general orthopedic surgery.

Vocational and Adult Education

663. ADVANCED VETERINARY OPHTHALMOLOGY I. GENERAL OPHTHALMOLOGY (5). LEC. 3, LAB. 4. Quarter by arrangement. Advanced general techniques of diagnosis, medication and surgical techniques necessary for veterinary ophthalmology.
- 664-665. ADVANCED SMALL ANIMAL MEDICINE (5-5). LEC. 5. Quarter by arrangement. Special study of the causes, methods of diagnosis, treatment and control of non-surgical diseases of small animals.
666. ADVANCED CANINE NEUROLOGY (5). LEC. 3, LAB. 6. Quarter by arrangement. Advanced study of the neurodiagnostics and non-surgical therapy of neurological disorder in small domestic animals.
667. SMALL ANIMAL UROGENITAL MEDICINE (5). LEC. 5. Quarter by arrangement. Advanced study of the causes, methods of diagnosis and non-surgical therapy of urogenital diseases of dogs and cats.
671. SMALL ANIMAL CARDIOPULMONARY SURGERY AND MEDICINE (5). LEC. 3, LAB. 6. Quarter by arrangement. Application of accepted, as well as the recently developed techniques of cardiovascular surgery.
672. ADVANCED VETERINARY OPHTHALMOLOGY II. INSTRUMENTATION (5). LEC. 2, LAB. 6. Quarter by arrangement. Emphasis is placed on the use of advanced instrumentation necessary for the diagnosis and treatment of ocular disease.
673. ADVANCED VETERINARY OPHTHALMOLOGY III. ADVANCED OPHTHALMIC MEDICINE (5). LEC. 5. Pr., VM 672. Quarter by arrangement. Advanced ophthalmology with emphasis on diagnosis and treatment of ocular diseases.
674. ADVANCED VETERINARY OPHTHALMOLOGY IV. ADVANCED OPHTHALMIC SURGICAL TECHNIQUE (5). LEC. 2, LAB. 6. Pr., VM 673. Quarter by arrangement. Advanced ophthalmology with emphasis on ophthalmic surgery.
698. RESEARCH PROBLEMS (2-5) (CREDIT TO BE ARRANGED.)
699. RESEARCH AND THESIS (CREDIT TO BE ARRANGED.)

Vocational and Adult Education (VED)

Professor J. Smith

Associate Professors White, Head, Hayes, Kraska, G. Smith, Waddy and Wilson

Assistant Professors Bean, Larkin, Morris, Patterson and Robinson

* The shorthand and keyboarding/typewriting sequence should be begun at the highest possible level because credit may be gained through advanced placement. With previous instruction, the student may enter the second or third quarter course. If a grade of C or higher is earned, credit is given for the lower courses. If a C is not earned, advanced placement credit will not be granted. Consult with VBU staff for placement.

Program Designators — When appropriate, certain sections of the following common offerings are identified by programs within the departments by the use of letter designations as noted: (A) Agriculture, (C) Trade and Industrial, (D) Marketing, (F) Adult, (H) Business.

102. ORIENTATION FOR TRANSFER STUDENTS (1). Helps transfers from other curricula and students pursuing the dual objectives program to understand teacher education and teaching as a profession.
104. ORIENTATION TO LABORATORY EXPERIENCES IN AREA OF SPECIALIZATION (1).
200. KEYBOARDING I* (3). LAB. 5. Mastery of keyboard with basic keyboarding applications. For students with no previous training in keyboarding/typewriting. (Students with previous keyboarding/typewriting instruction, consult with VBU staff for placement.)
201. KEYBOARDING II* (3). LAB. 5. Pr., VED 200 or one year of high school keyboarding/typewriting. Emphasis on business documents, such as letters, memorandums, reports and tables.
210. SHORTHAND I* (5). Pr., VED 200 or equivalent. Basic course in Gregg shorthand. Emphasis on recognition of principles; rapid reading of notes; dictation of new material.
211. SHORTHAND II* (5). Pr., VED 210. Reinforcement of principles; speed building dictation; development of transcription skills.
216. PLASTICS TECHNOLOGY (2). LEC. 1, LAB. 2. Laboratory oriented course in material and processes of plastic products.
246. INSTRUCTIONAL DRAWING (3). LAB. 6. Preparing for the shop laboratory, including making freehand and pictorial sketches and drawings, reading working drawings, blue prints, manufacturers guides and lettering, use of instruments, dimensioning, making models, floor plans, bills for materials, writing specifications and developing working plans.
301. PRACTICUM IN WOODWORKING (3). LEC. 1, LAB. 4. Introduction to machines, tools used in working with wood and studies in design, construction, and finishing objects of wood.
302. ADVANCED KEYBOARDING* (5). Pr., VED 201 or departmental approval. Development of production competencies in office situations. Use of various office equipment.
305. RECORDS MANAGEMENT (3). Basic procedures of filing, records storage and control. Practice in record keeping.
312. SHORTHAND/TRANSCRIPTION* (5). Pr., VED 211. Emphasis on theory development, communication skills, transcription techniques and proofreading. Transcription of office-style dictation and production of business correspondence in mailable form. Individualized development of dictation speed, transcription speed and correspondence production rates.

346. VOCATIONAL AND ADULT EDUCATION. (3). LEC. 2, LAB. 2. Principles of vocational education and their application in developing and operating preparatory and in-service programs.
352. MEDICAL TERMINOLOGY FOR HEALTH RELATED OCCUPATIONS (5). Equips student with essential medical terminology for effective communications among the members of the health team.
354. CAREERS IN HEALTH RELATED OCCUPATIONS (5). Identification of role and function in health related occupations including the range of occupations that require minimum training as well as those that require university-level education.
356. HEALTH DELIVERY SYSTEMS (5). Contemporary and emerging patterns in delivering health services.
400. INTRODUCTION TO POWER MECHANICS (3). LEC. 1, LAB. 4. Design and operational theories related to power machines, internal combustion engines; power trains; hydraulic and cooling systems.
401. PRACTICUM IN SMALL GASOLINE ENGINES (3). LEC. 1, LAB. 4. Application of skills and abilities needed in teaching the maintenance and repair of small air cooled engines. Theories of compression, carburetion and ignition; laboratory exercises in repair and maintenance.
402. AUTOMOTIVE CONSTRUCTION AND REPAIR (3). LEC. 1, LAB. 4. Theories of design, principles of operation and maintenance and repair of ignition system, fuel systems, power systems and chassis components.
404. PRACTICUM IN GENERAL METALS (3). LEC. 1, LAB. 4. Application of skills and abilities needed in the teaching of metal processes applicable to vocational education program in the secondary school. Metal properties; power tools; heat treating; ornamental iron work, cold metal; sheet metal; machining metals; and arc and gas welding.
405. THE SCHOOL SHOP (3). Organization and management of the school shop; methods and materials integrated with the study of jobs and problems basic to the teaching of skills in vocational education.
406. PRACTICUM IN BUILDING CONSTRUCTION AND MAINTENANCE (3). LEC. 1, LAB. 4. Application of skills and abilities needed in teaching the erections of buildings and other related structures.
407. PRACTICUM IN ELECTRICITY (3). LEC. 1, LAB. 4. Application of skills and abilities needed in the teaching of fundamental principles of electricity. Planning and developing projects involving an understanding of electrical principles as applied to materials selection, circuits, motors and devices; and maintenance and servicing of electrical equipment and appliances.
408. PRACTICUM IN GENERAL SHOP (3). LEC. 1, LAB. 6. Application of skills and abilities needed in teaching general shop skills to students and clients in school laboratories and rehabilitation centers.
409. TEACHING ELECTRONICS IN AREA OF SPECIALIZATION (3). LEC. 1, LAB. 4. Pr., consent of department head. Theories and practices used in school electronic laboratories; projects designed and constructed.
410. PROGRAMS IN HOME ECONOMICS FOR THE MIDDLE SCHOOL (4). LEC. 3, LAB. 2. Pr., admission to teacher education and FED 350 or equivalent. Principles of and experiences in designing middle school home economics programs; evaluation of instruction and programs.
414. PROGRAM IN AREA OF SPECIALIZATION (3). LEC. 2, LAB. 2. Pr., admission to Teacher Education. Program planning principles involved in designing program activities for specific areas of specialization.
415. TEACHING IN AREA OF SPECIALIZATION (3-5). LEC. 2-5, LAB. 2-4. Pr., admission to Teacher Education. Understanding of curriculum content: methods and techniques of instruction using appropriate instructional materials; planning and evaluation of instruction for specific area of specialization.
420. ADVANCED WORD PROCESSING SYSTEMS (5). Pr., VED 302 or equivalent. Introduction to office technology and communication skills with emphasis on word processing concepts and systems.
421. OFFICE INTERNSHIP (10). LAB. 20. Pr., VED 440, and senior standing. Supervised work experience.
425. PROFESSIONAL INTERNSHIP (15). Pr., senior standing, admission to Teacher Education. Provides supervised, on-the-job experiences in a school, college or other appropriate setting. Evaluation and analysis of the intern experience.
430. MICROCOMPUTER PROCESSING SYSTEMS (5). Pr., VED 420 or equivalent. Microcomputer processing applications to include spreadsheets, database management, telecommunications and graphics.
440. ELECTRONIC OFFICE PROCEDURES (5). Pr., VED 430 or equivalent. Overview of the electronic office, with processing procedures, administrative support and management functions, career development and simulations.
442. PRACTICUM IN METALWORKING PROCESSES (3). LEC. 1, LAB. 4. The properties of metals and application of metalworking processes including machine tool, foundry, sheet-metal, and standard fabrication techniques.
444. PRACTICUM IN ENVIRONMENTAL SYSTEMS (3). LEC. 1, LAB. 4. Applications of theory with emphasis on design, installation and maintenance of environmental systems in residential and light commercial structures.
446. DIRECTED INDEPENDENT STUDY (1-10). The student's learning efforts are guided toward desired objectives. Includes evaluation by professor and student of work accomplished at regular intervals.
450. SPECIAL TOPICS (1-5). Seniors and professors pursue selected concepts and theoretical formulations.
457. PRACTICUM IN GRAPHIC ARTS INSTRUCTION (3). LAB. 6. Pr., junior standing. To prepare pre-service and in-service vocational teachers to teach graphic arts skills in printing and duplicating techniques, advertising, display and other modes of graphic communication.
462. DIRECTED WORK EXPERIENCE IN AREA OF SPECIALIZATION (5). LAB. 10. Pr., VED 414. In-service, supervised work experience. Individually designed for part-time and/or summer experience.
466. TEACHING OUT-OF-SCHOOL GROUPS (3). Pr., VED 414. Conducting surveys, occupational analysis, using advisory committees, organizing, conducting and supervising various types of adult education.

469. COMMUNITY PROGRAMS IN ADULT EDUCATION (5). LEC. 4, LAB. 2. Pr., junior standing, VED 513 or departmental approval.
- 475-476-477-478-479-480. TRADE AND TECHNICAL EXPERIENCE (5-5-5-5-5-5). An experience completed by supervised employment or by examination on basis of journeyman level work experience at the maximum rate of 15 quarter hours for each year of such experience. In those occupations where there is no organized apprenticeship experience beyond the level of learner will correspond to starting the curriculum, elective course work may be substituted for these credits.
495. PRACTICUM (1-15). Provides experiences relating theory and practice, usually carried on simultaneously.

ADVANCED UNDERGRADUATE AND GRADUATE

508. TEACHING MECHANICAL TECHNOLOGY (5). LEC. 3, LAB. 4. Pr., junior standing. Objectives and methods; equipment and management of vocational education shops; organization of projects; recent development in specialized areas of mechanics; in-service teaching problems. Students plan for demonstration of methods for teaching mechanical skills.
510. OCCUPATIONAL INFORMATION (3). LEC. 2, LAB. 2. Pr., junior standing. Occupational structure, job qualifications and requirements, sources of occupational information, current trends, industrial and occupational surveys. Preparation, evaluation and dissemination of occupational information.
513. NATURE OF ADULT EDUCATION (5). Pr., junior standing. History and principles of adult education applied to the development and implementation of programs in remedial, occupational, continuing and life-long learning.
520. TEACHING VOCATIONAL EDUCATION TO STUDENT WITH SPECIAL EDUCATION NEEDS (5). Pr., junior standing successful completion of program planning and methods courses. Program development resources for teaching vocational skills to students who are economically and educationally disadvantaged or handicapped.
524. ADMINISTRATIVE MANAGEMENT (5). Pr., junior standing. Departmental approval. Management of information in many forms, systems design, data collection and processing methods, communications and record management, office physical facilities, other performance standards and control and motivation of personnel.
541. DEVELOPMENT OF VOCATIONAL EDUCATION (5). Pr., junior standing. Historical perspective of the development of vocational education with an overview of its nature and purpose relative to the technological society.
550. CAREER EDUCATION (4). Pr., junior standing. Introduction of career education as a system concept encompassing the entire educational experience in K-14. Emphasis will be given to the interrelated nature of the role of the administrator, the counselor and the classroom teacher in career education.
552. INSTRUCTIONAL PROGRAMS IN THE CONSTRUCTION INDUSTRY (4). LEC. 2, LAB. 4. Pr., VED 414 or 415 or graduate standing. Preparation of teachers to implement exploratory programs of a hands-on nature permitting students to gain insight into careers in the construction industry.
554. INSTRUCTIONAL PROGRAMS IN THE MANUFACTURING INDUSTRY (4). LEC. 2, LAB. 4. Pr., VED 414 or 415 or graduate standing. Preparation of teachers to implement exploratory programs of a hands-on nature that permits students to gain insight into careers in the manufacturing industry.
556. LEARNING RESOURCES IN AREA OF SPECIALIZATION (5). Pr., junior standing. Selecting, developing and utilizing instructional resources in teaching.
558. COORDINATION AND SUPERVISION OF VOCATIONAL EDUCATION PROGRAMS IN AREAS OF SPECIALIZATION (5). LEC. 4, LAB. 2. Pr., junior standing. Appropriate relationship between school and on-the-job programs, including records of coordination, student placement, improving employable skills and habits, recruitment and selection of work experience applicants, work experience rotation, public information and other similar activities.
574. ORGANIZATION OF INSTRUCTION IN VOCATIONAL-TECHNICAL EDUCATION (5). Pr., junior standing. Trade and occupational analysis, principles and procedures of identifying and selecting the skills and knowledge needed in the preparation of courses of instruction. Principles and procedures of individualizing instruction.
591. PROBLEMS IN TEACHING THE DISADVANTAGED ADULT (3-5). Pr., junior standing. Problems of the disadvantaged adult with emphasis on the unique sociological, psychological and physiological factors that influence learning and participation in remedial learning activities.

COURSES FOR GRADUATE STUDENTS

602. TEACHER EDUCATION IN VOCATIONAL AND ADULT EDUCATION (5). Pr., consent of department head. For supervisors of student teachers, teacher educators and other graduate students. Emphasis on administration of vocational education programs, research problems and problems supervising teachers encounter in the student teaching program.
603. PROBLEMS IN AGRICULTURAL OCCUPATIONS (5). Pr., consent of department head. Securing, organizing and interpreting information for guidance and teaching purposes; curriculum development; developing instructional units and planning teaching activities for on-farm and off-farm occupations.
606. ORGANIZATION AND UTILIZATION OF COMMUNITY RESOURCES (5). Pr., consent of department head. Processes through which new ideas and innovations are utilized through community organizations to maximize the effective use of physical and human resources.

Zoology and Wildlife Science

608. ADMINISTRATION OF VOCATIONAL AND ADULT EDUCATION (5). Pr., consent of department head. Designed to prepare professional personnel for leadership positions and to relate current social demands to vocationally oriented programs. Content includes philosophy and an application of procedures in administering and supervising new and on-going programs to meet changing socioeconomic conditions.
609. COMPREHENSIVE PLANNING FOR VOCATIONAL EDUCATION (5). Pr., VED 608. Processes of comprehensive planning for vocational education programs at high school and post-high school centers using local, state and regional data sources.
614. IMPLEMENTING COMMUNITY EDUCATION CONCEPTS (5). Integrating education within local institutions and sociocultural movements. A review of strategies for implementing lifelong education services and for promoting a sense of community.
616. ORGANIZING AND TEACHING ADULT, POST-SECONDARY AND CONTINUING EDUCATION (5). Pr., departmental approval. Utilization of principles of andragogy in helping adults who are not full-time students benefit from adult, post-secondary and continuing education.

Each of the following courses (except VED 641) may be taken as: (A) Agriculture, (C) Trade and Industrial, (D) Marketing (F) Adult, (H) Business.

625. INTERNSHIP (5-15). Provides advanced students with supervised, on-the-job experiences in a school, college or other appropriate setting. These experiences will be accompanied by regularly scheduled on-campus discussion periods to provide positive evaluation and analysis of the internship experience.
641. FOUNDATIONS OF VOCATIONAL EDUCATION (2). Emphasis on philosophical, historical, economical and sociological perspectives of vocational education in relation to the organization and administration of programs in institutional settings. Open to students in the fifth-year education program only.
646. DIRECTED INDEPENDENT STUDY (1-6). Special study in which the student's learning efforts are guided toward desired objectives. Includes evaluation by professor and student at regular intervals.
650. SEMINAR IN AREAS OF SPECIALIZATION (1-10). May be repeated for credit not to exceed 10 hours. Provides an opportunity for advanced graduate students and professors to pursue cooperatively selected concepts and theoretical formulations.
651. RESEARCH STUDIES IN EDUCATION IN AREAS OF SPECIALIZATION (5). Review, analysis and interpretation of available research with emphasis on designing new research to meet the changing needs of the school.
652. CURRICULUM AND TEACHING IN AREAS OF SPECIALIZATION (5). Teaching practices and reappraisal of selecting experiences and content for curriculum improvement.
653. ORGANIZATION OF PROGRAM IN AREAS OF SPECIALIZATION (5). Program, organization and development of basic and supplementary materials for guiding teachers, faculties and school systems in the continuous improvement of curriculum and teaching practices.
654. EVALUATION OF PROGRAM IN AREAS OF SPECIALIZATION (5). Evaluation and investigation of teaching effectiveness with attention also given to the utilization of human and material resources and the coordination of areas of specialization.

Prerequisites for the 651, 652, 653 and 654 courses are 18 hours of appropriate subject matter and 36 hours of psychology and/or professional education.

695. PRACTICUM (1-15). Provides advanced students with experiences closely relating theory and practice, usually carried on simultaneously.
696. GRADUATE RESEARCH FORUM (1). May be repeated but counted only once toward graduation. Presentation by graduate students of research projects and/or findings. Analysis of procedures and findings.
699. RESEARCH AND THESIS. (CREDIT TO BE ARRANGED.) May be taken more than one quarter.
798. FIELD PROJECT. (CREDIT TO BE ARRANGED.) May be taken more than one quarter.
799. RESEARCH AND DISSERTATION. (CREDIT TO BE ARRANGED.) May be taken more than one quarter.

Zoology and Wildlife Science (ZY)

Professors Bradley, Causey, Dobie, Dusi, G. Folkerts, Henry, Holler, Mirarchi, Pritchett and Wit

Alumni Professor Sundermann

Adjunct Professors Crozier and Dorgan

Alumni Associate Professor M.W. Wooten

Associate Professors Armstrong, Best, Dobson, Guyer, Hepp, Kempt, Lisano, Lishak, Speake, Stribling and M.C. Wooten

Adjunct Associate Professors Current, Frandsen, Heck and Williams

Assistant Professors Feminella, D. Folkerts, Hill, Mendonca and Moss

Adjunct Assistant Professor Simons

BI 101, 102 and 103 are prerequisite for many courses in this department. For a description of these and other general biology courses, see the section for Biology.

201. MARINE BIOLOGY (6). LEC. 4, LAB. 4. Pr., BI 101, 102 and 103. Summer. The invertebrates, vertebrates and marine plants as communities with emphasis on local examples. Taught only at Dauphin Island Sea Laboratory. Credit may not be earned in both ZY 201 and 436.

205. WILDLIFE CONSERVATION (3). LEC. 3. Fall. The history of wildlife conservation in North America and a presentation of current wildlife conservation problems and practices.
241. INTRODUCTION TO MARINE ZOOLOGY (6). LEC. 3, LAB. 9. Pr., BI 101, 102 and 103. Summer. A general introduction to the marine environment with emphasis on the local fauna. Taught only at the Gulf Coast Research Laboratory. Credit may not be earned in this course and ZY 307.
250. HUMAN ANATOMY (5). LEC. 4, LAB. 3. Pr., BI 101 or BI 105. The structure of the human body combined with a comprehensive study and dissection of a large mammal. Structural similarities and dissimilarities will be emphasized in the laboratory. A common laboratory section will meet one day at the lecture hour and the two-hour dissection laboratories will meet in small groups by sections.
251. PHYSIOLOGY (5). LEC. 4, LAB. 3. Pr., BI 103 or ZY 250. Prior credit for ZY 316, 524 or 560 precludes credit for this course. Function of mammalian systems with emphasis on man. Laboratory exercises will provide students with an opportunity to validate functions on laboratory animals.
300. GENETICS (5). LEC. 4, LAB. 3. Pr., BI 101 and college algebra or equivalent. Fall, Winter, Spring. Basic genetic principles, theoretical basis for genetic systems and modern areas of research. Laboratory emphasizes biometrical analysis of experiments using plants and animals. A common laboratory-recitation session will meet on the "fifth day" at the lecture hour and a two-hour data collecting lab will meet in small groups by sections.
301. COMPARATIVE ANATOMY (5). LEC. 3, LAB. 6. Pr., BI 103. Winter, Summer. Comparisons of the systems of the vertebrates.
302. VERTEBRATE EMBRYOLOGY (5). LEC. 3, LAB. 6. Pr., BI 103. Fall, Spring. Fertilization, cleavage, morphogenesis, and organogenesis of the frog, chick, pig and human from a descriptive and analytical viewpoint.
303. PRINCIPLES OF EVOLUTION AND SYSTEMATICS (5). LEC. 5. Pr., BI 102 or 103. Fall, Winter, Summer. The major processes, methods and philosophic basis for present day concepts of evolution and systematics.
306. PRINCIPLES OF ECOLOGY (5). LEC. 4, LAB. 3. Pr., 10 hrs. biology or departmental approval. Fall, Spring, Summer. The physical and biotic factors of the environment and the interactions of these with plants and animals. The organization and functions of communities and populations.
307. INTRODUCTION TO OCEANOGRAPHY (6). LEC. 4, LAB. 4. Pr., college algebra, general chemistry and general physics. Summer. The physics, chemistry, biology and geology of the oceans. Taught only at the Dauphin Island Sea Laboratory. Credit may not be earned in both ZY 307 and 435.
310. CELL BIOLOGY (4). LEC. 4. Pr., BI 101 or equivalent and CH 207. Fall, Winter. Morphology and physiology of cell membranes, cytoplasm and the formed elements of the cytoplasm and nucleus. Cell division, molecular transport, cellular homeostasis and biochemical pathways of energy production.
- 310L. CELL BIOLOGY LABORATORY (2). LAB. 4. Pr., ZY 310 or concurrently. Fall, Winter. Laboratory exercises in cell biology.
316. PHYSIOLOGY OF DOMESTIC ANIMALS (5). LEC. 4, LAB. 3. Pr., BI 103. Fall, Winter. Prior credit for ZY 251, 524 or 560 precludes credit for this course. Function of mammalian systems with emphasis on domestic mammals. Degree credit may not be earned in both ZY 316 and 251 or 524.
328. PRINCIPLES OF WILDLIFE MANAGEMENT (4). LEC. 4. Pr., a course in ecology. Fall. Fundamentals of wildlife management theory, application and administration.
- 328L. WILDLIFE MANAGEMENT LABORATORY (1). LAB. 3. Pr., ZY 328 or concurrently. Fall. Laboratory experiences in wildlife management.
401. INVERTEBRATE ZOOLOGY (5). LEC. 4, LAB. 4. Pr., BI 103. Winter. Biology of invertebrates.
402. NATURAL HISTORY OF VERTEBRATES (5). LEC. 4, LAB. 4. Pr., BI 103. Natural history of fishes, amphibians, reptiles, birds and mammals. Laboratory experience will be field technique oriented.
425. FOREST WILDLIFE MANAGEMENT (3). LEC. 3. Pr., FY 523 or departmental approval. Winter. Wildlife management as applied to forest properties. Restricted to students in forestry.
433. SEMINAR IN FISH AND WILDLIFE LAW ENFORCEMENT (1). Pr., junior standing. Spring, odd years. A weekly seminar course to interface students with professional personnel in the field of fish and wildlife law enforcement. Restricted to students in fisheries, forestry and wildlife management.
440. CLINICAL PHYSIOLOGY I (3). LEC. 3. Pr., ZY 250, 251, or equivalents. Coreq., NJR 301. Fall. Consideration of the musculature, the nervous system and the cardiovascular system. Emphasis will be on normal physiological function. Pathological conditions as alterations of normal function will be discussed. Pharmacological treatment of pathological states will be emphasized.
441. CLINICAL PHYSIOLOGY II (3). LEC. 3. Pr., ZY 440. Winter. Consideration of temperature regulation, kidney function, the liver, respiration, endocrinology and digestion. Emphasis will be on normal physiological function. Pathological conditions as alterations of normal function will be discussed. Pharmacological treatment of pathological states will be included.
452. DOLPHINS AND WHALES (2). Classification, anatomy and ecology of the cetaceans. Taught only at Dauphin Island Sea Lab.
470. HONORS THESIS (3-6). Pr., senior standing in the honors program. May be repeated once for a maximum of six hours credit.
490. WILDLIFE MANAGEMENT INTERNSHIP (5 HRS. PER QUARTER, 15 HRS. MAXIMUM.) Departmental approval, SU graded. Provides practical job experience under joint supervision of the Internship advisor and appropriate state, federal or private agency. Training will prepare student for potential career employment.
495. UNDERGRADUATE SEMINAR (1). Pr., junior standing. A. Zoology; B. Wildlife Science; C. Marine Biology; D. Molecular Biology. Oral presentation and discussion of research in the area of specialization. May be repeated for credit up to the limit permitted in respective curriculum model.

498. SPECIAL PROBLEMS (1-5). A. Zoology. B. Wildlife Management. C. Marine Biology. A student can register for a total of not more than five hours credit.

ADVANCED UNDERGRADUATE AND GRADUATE

502. DEVELOPMENTAL BIOLOGY (4). LEC. 4. Pr., ZY 302, 310, 300 or equivalent courses. Fall, even years. Consideration of induction, constancy of the genome, pathfinding by migrating cells and cell processes and morphogenetic movements.
509. HISTOLOGY (5). LEC. 4, LAB. 4. Pr., BI 103. Winter. Morphology and classification of tissues; arrangement of tissues in organs and systems of vertebrate animals.
511. GENERAL PARASITOLOGY (5). LEC. 4, LAB. 3. Pr., BI 103 or ZY 250 and 251. Winter. Origin, adaptations, physiology and ecology of parasites. Identification and life histories of representative parasitic protozoa, helminths and arthropods with emphasis on host-parasite relationships.
516. STUDIES IN FIELD BIOLOGY AND ECOLOGY (8). Pr., major or minor in a biological field, departmental approval. Offered in intervals between quarters. Students should register during the quarter immediately before. Intensive field studies of an area outside Alabama. A travel fee, in addition to tuition will be charged.
517. PRINCIPLES OF POPULATION GENETICS (5). LEC. 4, LAB. 3. Pr., ZY 300. Spring, even years. Origin, maintenance and expression of genetic variability in natural populations. Designed especially for students planning to work with populations of organisms, whether with aspects of management, breeding or control.
519. MOLECULAR GENETICS (3). Pr., ZY 300. Fall, even years. Current status of molecular genetics; nucleic acids, regulation, mutagenesis and immunology will be considered.
520. HUMAN GENETICS (5). LEC. 5. Pr., ZY 300, CH 208. Spring, odd years. Effects of normal and abnormal chromosome complements, the biological interaction of genes, and the effects of mutation and changes in gene frequency on human populations; problems in small sample analysis, biochemical screening of human "carriers," and the prospects for genetic engineering.
524. ANIMAL PHYSIOLOGY (5). LEC. 4, LAB. 3. Pr., 10 hours advanced zoology and CH 207 or five hours advanced zoology, CH 207 and 208. Winter, Summer. General physiological principles common to various vertebrate taxa illustrated with examples that are most demonstrative. An effort is made to include unique physiological adaptations.
527. WILDLIFE PHILOSOPHY AND POLICY (3). LEC. 3. Pr., a course in natural resource management. Fall. Examination of attitudes, philosophies and policies that govern management of the wildlife resource. Modern methods used in dealing with the public to implement wildlife policies. Intended for students interested in employment with public or private agencies dealing with natural resources.
528. WILDLIFE BIOLOGY (5). LEC. 5. Pr., ZY 328 or concurrent. Winter. Ecology and management of selected wildlife species of the U.S. Emphasis on natural history, census methods and management strategies.
- 528L. WILDLIFE BIOLOGY LABORATORY (2). LAB. 6. Pr., ZY 528 or concurrent. Winter. Practical laboratory exercises to acquaint the student with modern methodology and techniques in studying wild bird and mammal populations.
529. WILDLIFE DAMAGE CONTROL (3). LEC. 3. Pr., 10 hours of wildlife ecology and management. Winter, alternate years. Examination of the principles and methods for controlling problems and damage caused by wildlife. Extension and research consideration will be reviewed. Intended for students interested in employment with public or private agencies dealing with wildlife resources.
531. WILDLIFE HABITAT ANALYSIS (3). LEC. 1, LAB. 6. Pr., ZY 528, BY 506. Spring. Practical exercises in vegetation analysis, utilization studies, aerial photograph interpretation and cover type mapping.
534. PROTOZOOLOGY (5). LEC. 3, LAB. 6. Pr., ZY 310 and 511 or equivalents. Winter, alternate years. Free-living and parasitic protozoa important to agriculture, wildlife and humans. Morphology, cell biology, reproduction, ecology and life histories will be emphasized.
538. GENERAL ICHTHYOLOGY (5). LEC. 3, LAB. 6. Pr., BI 103. Fall. Survey of functional morphology, classification and distribution of fishes. Introduction to faunistic literature of North America and the world. Identification of fishes from the Gulf of Mexico and North American fresh waters.
540. WETLAND BIOLOGY (5). LEC. 4, LAB. 4. Pr., ZY 306 or equivalent and departmental approval. Spring, even years. Ecology and biota of freshwater and estuarine wetland habitats with emphasis on North American wetlands. Discussion of practical and theoretical issues related to the conservation, management and maintenance of freshwater and estuarine wetlands. One weekend field trip and one longer field trip required. A research paper is required.
542. MARINE FISHERIES MANAGEMENT (6). LEC. 3, LAB. 9. Pr., 18 hours of biology, including BI 103. Summer. Fisheries management philosophy, objectives, problems and principles involved in management decisions. Offered only at the Gulf Coast Laboratory, Ocean Springs, MS.
543. MARINE VERTEBRATE ZOOLOGY AND ICHTHYOLOGY (9). LEC. 5, LAB. 12. Pr., 18 hours of biology, including BI 103. The marine chordata, including lower groups and the mammals and birds, with most emphasis on the fishes. Offered only at the Gulf Coast Research Laboratory, Ocean Springs, MS.
545. MARINE INVERTEBRATE ZOOLOGY (9). LEC. 5, LAB. 12. Pr., 18 hours biology, including BI 103 and ZY 401. Summer. The marine invertebrates, especially those of the Mississippi Sound region. Emphasis on the structure, classification, phylogenetic relationships and functional processes. Offered only at the Gulf Coast Laboratory, Ocean Springs, MS.
548. MARINE ECOLOGY (7.5). LEC. 3, LAB. 6. Pr., ZY 306 and acceptable chemistry. Summer. The relationship of marine organisms to their environment and the effects of the environment on the abundance and distribution of marine organisms. Offered only at the Gulf Coast Laboratory, Ocean Springs, MS.

550. ZOOGEOGRAPHY OF THE VERTEBRATES (5). LEC. 4, LAB. 3. Pr., ZY 402 or departmental approval. Spring, odd years. Principles of geographic distribution of vertebrate animals.
551. MARINE INVERTEBRATE ZOOLOGY (6). LEC. 4, LAB. 4. Pr., BI 103 plus 10 hours of zoology at the 200-level or above. Summer. The natural history, systematics and morphology of marine invertebrates from a variety of habitats in the Gulf of Mexico, oriented toward a field and laboratory approach. Participation in extended field trips is part of the course. Taught only at the Dauphin Island Sea Lab.
553. MARINE VERTEBRATE ZOOLOGY (6). LEC. 4, LAB. 4. Pr., BI 101, 103 and departmental approval. Summer. The systematics, zoogeography and ecology of marine fishes, reptiles, and mammals. Taught only at the Dauphin Island Sea Laboratory. May not be substituted for ZY 402.
554. COASTAL ORNITHOLOGY (6). LEC. 3, LAB. 9. Pr., ZY 402. Summer. Coastal and pelagic birds with emphasis on ecology, taxonomy and distribution. Taught only at the Dauphin Island Sea Laboratory. May not be substituted for ZY 605.
555. MARINE ECOLOGY (6). LEC. 3, LAB. 9. Pr., ZY 306, college physics and chemistry and departmental approval. Summer. Bioenergetics, community structure, population dynamics, predation, competition and speciation in marine eco-systems. Taught only at the Dauphin Island Sea Lab.
556. BEHAVIOR AND NEUROBIOLOGY OF MARINE ANIMALS (6). LEC. 5, LAB. 10. Pr., 20 hours of zoology, psychology and departmental approval. Survey of the behavior, neuroanatomy and neurophysiology of selected marine invertebrates and vertebrates. Taught only at the Gulf Coast Research Laboratory.
558. MARINE BIOLOGY FOR TEACHERS (9). LEC. 12, LAB. 18. Pr., BI 101, 102, 103, departmental approval. Summer. Introduction to the marine environment and marine organisms, their behavior and ecology, for teachers. Taught at the Dauphin Island Sea Lab. This is a five-week course.
560. MAMMALIAN PHYSIOLOGY I (5). LEC. 4, LAB. 3. Pr., CH 208, ZY 250 or equivalent. Fall, Spring. Cellular bioelectric phenomena, muscle contractility, neurophysiology and cardiovascular physiology. Lab will use modern methodology for the observation of physiological fact.
561. MAMMALIAN PHYSIOLOGY II (5). LEC. 4, LAB. 3. Pr., ZY 560 or equivalent. Winter, Summer. A continuation of ZY 560 with emphasis on respiratory, renal, digestive, metabolic and endocrine physiology.
565. ETHOLOGY (5). LEC. 4, LAB. 3. Pr., ZY 306, 522, 524 or departmental approval. Spring. Animal behaviors, analysis of their adaptive values, development and evolution.
574. HERPETOLOGY (5). LEC. 3, LAB. 6. Pr., 15 hours of biology beyond the freshman level. Spring, Summer. Systematics, ecology and behavior of amphibians and reptiles.
575. ORNITHOLOGY (5). LEC. 3, LAB. 6. Pr., 15 hours of biology beyond the freshman level. Winter. Systematics, ecology and behavior of birds.
576. MAMMALOLOGY (5). LEC. 3, LAB. 6. Pr., 15 hours of biology beyond the freshman level. Winter. Systematics, behavior and ecology of mammals.
590. SPECIAL TOPICS IN MARINE BIOLOGY (1-5) Pr., departmental approval. Comprehensively directed studies in marine biology. Taught at the Dauphin Island Sea Lab.
591. SPECIAL TOPICS IN ZOOLOGY (1-5). Pr., departmental approval. Comprehensively directed studies in zoology.

COURSES FOR GRADUATE STUDENTS

603. ADVANCED ICHTHYOLOGY (5). LEC. 4, LAB. 3. Pr., ZY 538 or equivalent. Winter. Intensive investigation of current literature and relevant research dealing with fisheries.
576. MAMMALOLOGY (5). LEC. 3, LAB. 6. Pr., 15 hours of biology beyond the freshman level. Winter. Systematics, behavior and ecology of mammals.
604. ADVANCED HERPETOLOGY (5). LEC. 4, LAB. 3. Pr., ZY 574 or equivalent. An intensive investigation of current literature and relevant research dealing with amphibians and reptiles.
605. ADVANCED ORNITHOLOGY (5). LEC. 4, LAB. 3. Pr., ZY 575 or equivalent. Spring. An intensive investigation of the current literature and relevant research dealing with birds.
606. ADVANCED MAMMALOLOGY (5). LEC. 4, LAB. 3. Pr., ZY 576 or equivalent. An intensive investigation of the current literature and relevant research dealing with mammals.
607. UPLAND WILDLIFE ECOLOGY (5). LEC. 3, LAB. 6. Pr., BY 506, BY 513, ZY 528 or departmental approval. Fall, odd years. Application of wildlife ecological theories, techniques and administration with emphasis on upland species. Field trips will be made, including at least four overnight weekend trips.
608. FOREST WILDLIFE ECOLOGY (5). LEC. 5. Pr., ZY 528. Summer, even years. Intensive investigations into current aspects of the ecology and management of the important wildlife species of North America.
609. CONSERVATION BIOLOGY (4). LEC. 4. Spring, odd years. Examination of practical and theoretical issues in the conservation and maintenance of biological diversity and the recovery and management of endangered species. Formal lectures; discussion of current conservation problems.
616. SYSTEMATIC ICHTHYOLOGY (3). LEC. 1, LAB. 6. Pr., ZY 538 or FAA 538. Winter, odd years. Fishes of the world; their morphology, distribution and use to man. Emphasizes individual work with world faunistic literature, revisions and museum materials.
618. ADVANCED INVERTEBRATE ZOOLOGY (5). LEC. 3, LAB. 6. Pr., ZY 401 or equivalent. Spring, odd years. The biology of invertebrate phyla with emphasis on minor phyla, collection and identification.
619. COMPARATIVE PHYSIOLOGY (5). LEC. 4, LAB. 3. Pr., ZY 524 or equivalent. Spring, odd years. A comparative study of the mechanisms of physiological adaptations among invertebrates and lower vertebrates to the environments in which they are found. Special emphases upon respiration, salt and water balance, excretion and acid-base balance.

623. ORGANIC EVOLUTION (5). LEC. 5. Pr., ZY 300, Fall. Advanced treatment of topics of current interest to evolutionary biology.
627. IMMUNOLOGY AND PHYSIOLOGY OF PARASITES (5). LEC. 3, LAB. 6. Pr., ZY 511, BY 300, ZY 524 and departmental approval. Spring, odd years. Immunity mechanisms to infections of protozoan and helminth parasites. Chemical physiology of host-parasite relationship to include nutrition, metabolism, toxicity and chemotherapy.
629. EVOLUTIONARY GENETICS (3). LEC. 3. Pr., ZY 300. Spring, odd years. The genetic architecture of natural populations as it relates to evolution and population biology.
630. ADVANCED GENETICS (5). Pr., ZY 300 and ZY 518. Winter, odd years. Non-Mendelian hereditary systems; regulation of gene action as it influences growth, differentiation and development; and the status of contemporary genetics research.
631. DEVELOPMENTAL GENETICS (3). Pr., ZY 300, ZY 302, ZY 519. Coreq. ADS 519. Winter, odd years. Gene action on the biochemical level pertaining to early development, growth and differentiation and aging. Principles of gene regulation and organization derived from both prokaryotic and eukaryotic systems are discussed.
632. HELMINTHOLOGY (5). LEC. 3, LAB. 6. Pr., ZY 511. Spring, even years. Advanced studies of the morphology, physiology, life cycles and host-parasite relationships of helminths. Opportunity for making extensive literature studies and collections of the parasites of a particular group of animals in which the student is most interested.
635. WATERFOWL BIOLOGY AND MANAGEMENT (5). LEC. 3, LAB. 6. Pr., ZY 528. Winter, even years. Taxonomy, biology and management of water fowl of the world; emphasis on North American species.
636. POPULATION ECOLOGY (5). LEC. 5. Pr., ZY 306. Winter. Structure, dynamics and natural regulatory mechanisms of animal populations; survival strategies emphasizing reproduction, competition and adaptation to environmental changes.
637. STREAM ECOLOGY (4). LEC. 3, LAB. 3. Pr., FAA 515 or 624 or departmental approval. Fall. Physical, chemical and biological aspects of river and stream ecosystems emphasizing effects of natural environmental factors and human influences on stream biota and quantitative methods used to study stream ecosystems.
644. PHYSIOLOGY OF THE CELL (3). LEC. 3. Pr., ZY 310 and 524. Winter, even years. The basic physiological processes at the cellular level with the tools and approaches of physical sciences.
647. ENDOCRINOLOGY (5). LEC. 5. Pr., ZY 524 and ADS 519. Spring. A comprehensive treatment of the classical and modern literature of endocrinology.
649. PHYSIOLOGICAL ECOLOGY (4). LEC. 3, LAB. 3. Pr., ZY 524 or departmental approval. Spring, even years. The physiological adaptations of animals to the specific physical and biotic environments in which they live.
650. PROBLEMS IN MARINE ANIMAL PHYSIOLOGY (6). LEC. 4, LAB. 6. Pr., cell physiology or biochemistry and departmental approval. Quarter by arrangement. Comparative physiology of marine animals, stressing biochemical mechanisms of osmoregulation, temperature control and respiration. Taught at Dauphin Island Sea Lab.
651. OCEANOLOGY OF THE GULF OF MEXICO (5). LEC. 3, LAB. 4. Pr., a course in oceanography and departmental approval. Quarter by arrangement. A detailed descriptive study of the oceanology of the Gulf of Mexico and adjacent waters. The areas of study will include the coastal zone, continental shelf and deep ocean. Taught at Dauphin Island Sea Lab.
652. MARINE ZOOGEOGRAPHY (5). LEC. 3, LAB. 6. Pr., a course in marine biology and departmental approval. Quarter by arrangement. Historical, physical and biological factors influencing the distribution of marine organisms. Emphasis will be on the Western North Atlantic. Taught at Dauphin Island Sea Lab.
653. ESTUARINE SCIENCE (6). LEC. 6, LAB. 6. Pr., departmental approval. Quarter by arrangement. An in-depth study of the physical, chemical and biological parameters of estuarine ecosystems. The course is structured to provide field experience in addition to lecture material. Taught at Dauphin Island Sea Lab.
670. TROPICAL BIOLOGY: AN ECOLOGICAL APPROACH (12). LEC. 6, LAB. 12. Pr., 20 hours of biological courses at or above the 500-level. Winter, Summer. An in-depth introduction to the principles of ecology as they operate in the tropics. Orientation and introductory lectures in San Jose, Costa Rica, followed by field work of 2-10 days at each of six or more contrasting tropical sites.
671. TROPICAL AGRO ECOLOGY (12). LEC. 6, LAB. 12. Pr., 20 hours of agricultural or biological sciences. Summer. A focus on the application of ecological principles to tropical agricultural systems with emphasis on research training. For students with broad range of backgrounds from basic ecology to various agricultural sciences. After orientation in San Jose, Costa Rica, class will operate in the field at three main habitats.
690. SPECIAL TOPICS IN ZOOLOGY AND WILDLIFE SCIENCE (1-5). Pr., departmental approval. Comprehensively directed studies relating to the zoological and wildlife science areas. (A). Cell Biology, (B). Community Ecology, (C). Ecology, (D). Herpetology, (E). History of Zoology, (F). Ichthyology, (G). Insect Hormones and Development, (H). Mammalogy, (I). Marine Biology, (J). Neurobiology, (K). Ornithology, (L). Systems Physiology, (M). Wildlife Biology, (N). Wildlife Habitat Analysis, (O). Wildlife Philosophy, Policy, Public Relations, (P). Genetics, (Q). Developmental Biology, (R). Wildlife Damage Control, (S). Histology, (T). Parasitology, (U). Population Genetics, (V). Human Genetics, (W). Molecular Genetics, (X). Animal Behavior, (Y) Wetland Biology, (Z) Evolution.
691. SPECIAL TOPICS IN ZOOLOGY AND WILDLIFE SCIENCE (1-5). Pr., departmental approval. Comprehensively directed studies relating to the zoological and wildlife science areas. (A). Field Biology, (B). Invertebrate zoology.
693. SEMINAR (1). Required of master's students. Oral presentation and discussion of research in the field of specialization.

695. SPECIAL PROBLEMS IN COASTAL ZONE BIOLOGY (1-5). Supervised research problems in marine biology. Offered only at the Dauphin Island Sea Lab.
697. PROBLEMS IN MARINE ZOOLOGY (4-9). Pr., ZY 542-545-548. All year. Supervised research on specific problems in marine zoology for graduates. Offered only at the Gulf Coast Research Lab., Ocean Springs, MS.
698. SPECIAL PROBLEMS (2-5). A. Zoology; B. Wildlife. Numerous study areas are available under each of these categories. Consult individual faculty member before registering.
699. RESEARCH AND THESIS (CREDIT TO BE ARRANGED.)
790. SPECIAL TOPICS IN ZOOLOGY AND WILDLIFE SCIENCE (1-5). Pr., departmental approval. Comprehensively directed studies relating to the zoological and wildlife science areas. (A). Cell Biology, (B). Community Ecology, (C). Ecology, (D). Herpetology, (E). History of Zoology, (F). Ichthyology, (G). Insect Hormones and Development, (H). Mammalogy, (I). Marine Biology, (J). Neurobiology, (K). Ornithology, (L). Systems Physiology, (M). Wildlife Biology, (N). Wildlife Habitat Analysis, (O). Wildlife Philosophy, Policy, Public Relations, (P). Genetics, (Q). Developmental Biology, (R). Wildlife Damage Control, (S). Histology, (T). Parasitology, (U). Population Genetics, (V). Human Genetics, (W). Molecular Genetics, (X). Animal Behavior, (Y). Wetland Biology, (Z). Evolution.
791. SPECIAL TOPICS IN ZOOLOGY AND WILDLIFE SCIENCE (1-5). Pr., departmental approval. Comprehensively directed studies relating to the zoological and wildlife science areas. (A) Field Biology, (B). Invertebrate zoology.
793. DOCTORAL SEMINAR (1). Required of doctoral students. Oral presentation and discussion of research in the field of specialization.
798. DOCTORAL SPECIAL PROBLEMS (2-5). (A). Zoology; (B). Wildlife Science. Numerous study areas are available under each of these categories. Consult individual faculty member before registering.
799. RESEARCH AND DISSERTATION (CREDIT TO BE ARRANGED.)

Faculty and Staff

The parenthetical designation after a faculty member's title indicates the department. The first date after the title indicates the year of first appointment to any position in the institution; the second, the year of appointment of present rank. If your information is not correct or not up-to-date, then fill out a Personnel Data Form (PDF) and send it to University Personnel Services in Langdon Hall.

GENERAL ADMINISTRATIVE OFFICERS

- MUSE, WILLIAM V., *President & Professor (Marketing & Transportation)*, 1992. B.S., Northwestern State; M.B.A., Ph.D., Arkansas
- PARKS, PAUL F., *Provost & Vice President for Academic Affairs & Professor (Animal & Dairy Science)*, 1965, 1993. B.S., M.S., Auburn; Ph.D., Texas A&M
- LARGE, DONALD L., *Executive Vice President*, 1986, 1997. B.S., M.Ed., Auburn
- MORIARTY, C. MICHAEL, *Associate Provost & Vice President for Research (Adm.-VP Research)*, 1994. B.S., Carnegie Mellon; M.S., Cornell; Ph.D., Rochester
- WILSON DAVID, *Associate Provost & Vice President for University Outreach*, 1995. B.S., M.Ed., Tuskegee; M.Ed., Ed.D., Harvard
- BURKHALTER, BETTYE B., *Interim Vice President for Student Affairs*, 1978, 1995. B.S., M.A., Ed.D., Ph.D., Alabama
- DEMENT, BETTY M., *Vice President for Alumni & Development*, 1973, 1995. B.S., M.A., Auburn
- FERGUSON, JIMMY DAN, *Vice President for Administrative Services*, 1993. B.S., M.B.A., Ph.D., Texas A&M
- SAIGO, ROY H., *Chancellor of Auburn University at Montgomery*, 1994. B.A., California-Davis; Ph.D., Oregon State
- ARMSTRONG, LEE F., *General Counsel, President's Office*, 1989, 1994. B.S., J.D., Alabama
- ARMSTRONG-WRIGHT, DEBRA A., *Executive Director, Affirmative Action/Equal Employment Office*, 1990. B.A., M.Ed., Auburn; J.D., Alabama
- BROWN, JAMES C., *Executive Director, Minority Advancement and Minority Student Services*, 1993, 1997. B.S., M.Ed., Mississippi State; Ed.D., Mississippi
- HAMMOND, LYNNE B., *Assistant to the President and Secretary to the Board of Trustees*, 1991, 1997. B.S., Auburn
- HOUSEL, DAVID E., *Director of Intercollegiate Athletics*, 1970, 1994. B.A., Auburn
- LOWTHER, G. SAM, *Executive Director, Planning & Analysis*, 1978, 1993. B.S., M.B.A., Auburn
- MITCHELL, ALFRED H., *Executive Director, Governmental Affairs*, B.A., Auburn
- PEPINSKY, PETER R., *Executive Director, University Relations*, B.A., Auburn

ACADEMIC ADMINISTRATIVE OFFICERS

- MARION, JAMES E., *Dean of Agriculture, and Director, Agricultural Experiment Station*, 1988, 1997. B.S., Berea; M.S., Kentucky; Ph.D., Georgia
- REGAN, J. THOMAS, *Dean of Architecture*, 1994. B.Arch., Auburn; Graduate Diploma, London
- ALDERMAN, CHARLES W., *Dean of Business*, 1977, 1993. B.S., M.B.A., Auburn; D.B.A., Tennessee
- KUNKEL, RICHARD C., *Dean of Education*, 1990. B.S.Ed., N.E. Missouri State; M.Ed., Missouri; Ph.D., St. Louis
- WALKER, WILLIAM F., *Dean of Engineering*, 1988. B.S., M.S., Texas; Ph.D., Oklahoma State
- THOMPSON, EMMETT, *Dean & Professor of Forestry, and Associate Director, Agricultural Experiment Station*, 1977, 1997. B.S., Oklahoma State; M.S., North Carolina State; Ph.D., Oregon State
- HENTON, JUNE M., *Dean of Human Sciences, and Associate Director, Agricultural Experiment Station*, 1985, 1997. B.S., Oklahoma State; M.S., Nebraska; Ph.D., Minnesota
- VACANT, *Dean of Liberal Arts*
- PITTS, CHARLOTTE A., *Dean of Nursing*, 1986, 1996. B.S.N., Alabama-Birmingham; M.S.N., Med. Col. of Georgia; Ed.D., Auburn
- R. LEE EVANS, JR., *Dean of Pharmacy*, 1994. B.S., Georgia; Ph.D., Tennessee
- SCHNELLER, STEWART W., *Dean of Sciences & Mathematics, and Associate Director, Agricultural Experiment Station*, 1994, 1997. B.S., M.S., Louisville; Ph.D., Indiana U.
- BOOSINGER, TIMOTHY R., *Dean of Veterinary Medicine, and Associate Director, Agricultural Experiment Station*, 1983, 1997. D.V.M., Ph.D., Purdue
- PRITCHETT, JOHN F., *Associate Vice President & Dean of the Graduate School*, 1973, 1995. B.S., M.S., Auburn; Ph.D., Iowa State
- HOLLOWAY, BOBBY E., *Interim Dean of Libraries*, 1980, 1995. B.A., Harding; M.L.S., Kentucky
- SWANSON, DONALD G., *General Faculty Chairman & Professor (Physics)*, 1980, 1985. B.Theo., NW Christian; B.S., Oregon; M.S., Ph.D., Cal. Tech

FACULTY AND STAFF

- ABBETT, VANCE N., *Instructor (Political Science)*, 1986, 1987. B.S., Troy State; J.D., Jones Law
- ABELL, ELLEN, *Assistant Professor (Human Development & Family Studies)*, 1993. B.A., Illinois; M.A., Ph.D., Washington State
- ABERNETHY, AVERY M., *Associate Professor (Marketing & Transportation)*, 1988, 1994. B.S., B.A., North Carolina; Ph.D., South Carolina
- ABNEY, KEITH, *Instructor (Philosophy)*, 1995. B.A., Emory; M.A., Fuller Seminary; M.A., M.A., Notre Dame
- ABRAM, SUZANNE L., *Instructor (English)*, 1996. B.A., Arizona State; M.A., M.A., Ph.D., Indiana U.; M.A., Indiana State
- ACOSTA, VERONICA M., *Assistant Professor (Health & Human Performance)*, 1991. B.S., St. Louis; M.S., Ph.D., Wisconsin
- ADAIR-WALLACE, BARNESE W., *Supervisor, Housing & Residence Life*, 1981, 1995. B.S., Faulkner
- ADAMS, DONALD W., *Instructor (Educational Foundations, Leadership & Technology)*, 1996. B.S., Florida State; M.Ed., Springfield, Ed.D., Indiana U
- ADAMS, JAMES F., *Associate Professor (Agronomy & Soils)*, 1985, 1992. B.S., M.S., Auburn; Ph.D., Kansas State
- ADAMS, JAMES W., *Associate Professor (Marketing & Transportation)*, 1969. B.B.A., M.B.A., D.B.A., Georgia State
- ADAMS, MURRAY C., *Associate Professor (Sociology)*, 1969, 1989. B.A., M.A., Mississippi; Ph.D., Kentucky
- ADANUR, SABIT, *Associate Professor (Textile Engineering)*, 1992, 1996. B.S., Istanbul Tech; M.S., Ph.D., North Carolina State

Faculty and Staff

- ADERHOLT, JOSEPH M., *Specialist* (Chemical Engineering), 1983.
- ADERHOLDT, MARK W., *Associate Mechanical Engineer, Architect's Office*, 1994. B.S., Auburn
- ADERHOLDT, ROBERT W., *Professor*, (Building Science), 1980, 1992. B.M.E., M.S., Auburn; Ph.D., Georgia Tech
- ADKINS, BENNIE G., *Instructor, Facilities*, 1990. B.S., M.S., M.S., Troy State
- ADRIAN, JOHN L., *Professor* (Agricultural Economics & Rural Sociology), 1974, 1984. B.A.A., M.S., Auburn; Ph.D., Tennessee
- AKEY, THERESA M., *Assistant Professor* (Educational Foundations, Leadership & Technology), 1996. B.A., Arkansas; M.Ed., Delta State; Ph.D., Kansas
- ALBEE, RICHARD D., *Art Coordinator, University Relations*, 1986. B.F.A., Auburn
- ALBERT, LLOYD, *Superintendent, Facilities*, 1984, 1989.
- ALBRECHT, ULRICH F., *Professor* (Mathematics), 1984, 1987. B.S., M.S., Essen; Ph.D., New Mexico State; Ph.D., Duisburg
- ALDERMAN, CHARLES W., *Dean* (Adm.-Business), 1977, 1993. B.S., M.B.A., Auburn; D.B.A., Tennessee
- ALDRIDGE, M. DAYNE, *Associate Dean & Professor*, T. Walter Ctr. for Technology Mgmt., 1984, 1994. B.S., W. Virginia; M.E.E., D.Sc., Virginia
- ALEKNA, RICHARD A., *Director*, Distance Learning & Outreach Technology, 1991, 1993. B.A., M.A., Indiana State
- ALEXANDER, DAVID E., *Associate Professor* (Music), 1972, 1984. B.M., M.M., Texas
- ALLEN, GEORGE W., *Manager* (Mechanical Engineering), 1979, 1990.
- ALLEN, JUDY R., *Assistant to the Dean II* (Adm.-Sciences & Mathematics), 1981, 1992.
- ALLEN, SARA L., *Administrative Assistant III*, Housing & Res. Life, 1975, 1985.
- ALLEY, KELLY D., *Associate Professor* (Sociology), 1991, 1996. B.S., Cornell; M.A., Ph.D., Wisconsin
- ALVAREZ, NICOLAS E., *Professor* (Foreign Languages & Literatures), 1989, 1991. B.A., Puerto Rico; M.A., Ph.D., Berkeley
- ALVERSON, THELMA B., *Senior Academic Advisor* (Adm.-Sciences & Mathematics), 1982, 1994. B.S., Auburn
- ALVERSON, WILLIAM J., *Assistant Dean* (Adm.-Agriculture), 1965, 1983. B.S., M.Ed., Auburn
- ANDERSON, ROBERT V., *Visiting Professor* (Philosophy), 1995. A.B., Chicago; M.A., Ph.D., Southern California
- ANDERSON-HARPER, HEIDI, *Associate Professor* (Pharmacy Care Syst.), 1989, 1993. B.S., M.S., Ph.D., Purdue
- ANDERSON, BRIAN D., *Lead Specialist*, University Computing, 1994, 1996. B.S., Oklahoma State
- ANDERSON, BRIAN L., *Research Supervisor* (Animal & Dairy Sciences), 1996. B.S., Berea
- ANDERSON, DAWN R., *Librarian II & Head*, Library, 1994, 1996. B.A., Xavier; M.S., Illinois
- ANDERSON, GLENN A., *Librarian III & Head*, Library, 1978, 1992. B.A., M.A., SUNY-Albany; M.L.S., Florida State
- ANDERSON, LENDA J., *Associate Professor* (Consumer Affairs), 1980, 1992. B.S., Louisiana Tech; M.S., LSU; Ed.D., Auburn
- ANDERSON, MARY E., *Clinical Instructor* (Nursing), 1993, 1994. B.S.N., Tennessee; M.S.N., Georgia
- ANDERSON, S. DIANE, *Contract Administrator*, Contracts & Grants Administration, 1979, 1996.
- ANGARANO, DONNA W., *Associate Dean* (Adm. - Vet. Med.), 1986, 1995. B.S., D.V.M., Missouri
- APPEL, ARTHUR G., *Associate Professor* (Entomology), 1985. B.A., UCLA; M.S., Ph.D., California-Riverside
- APPELBAUM, BROOKS C., *Assistant Professor* (English), 1994. B.A., Princeton; M.A., Ph.D., Cornell
- ARGUE, BRADLEY J., *Research Associate* (Fisheries & Allied Aquacultures), & Allied Aquacultures, 1989, 1996. B.S., Minnesota
- ARMENAKIS, ACHILLES, *Torchmark Professor* (Management), 1973, 1992. B.S., M.B.A., Louisiana Tech; D.B.A., Mississippi State
- ARMSTRONG-WRIGHT, DEBRA, *Executive Director*, Affirmative Action/Equal Employment Office, 1990. B.A., M.Ed., Auburn; J.D., Alabama
- ARMSTRONG, JAMES B., *Extension Specialist & Associate Professor* (Zoology-Wildlife Science), 1990, 1995. B.S., Freed-Hardeman; M.S., Abilene Christian; Ph.D., Virginia Tech
- ARMSTRONG, LEE F., *General Counsel*, President's Office, 1989, 1994. B.S., J.D., Alabama
- ARMSTRONG, MARK L., *Student Recruiter*, Admissions, 1996. B.A., Mississippi State
- ARRINGTON, MATTIE R., *Instructor* (Curriculum & Teaching), 1996. B.S., Tuskegee; M.Ed., Alabama-Birmingham
- ASH, BARBARA H., *Associate Professor* (Curriculum & Teaching), 1982, 1996. B.A., Marshall; M.A., SUNY; Ph.D., Florida State
- ASHMORE, SUSAN Y., *Instructor* (History), 1996. B.A. Texas; A.B.D., Auburn
- ASKEW, JAMES C., *Associate Superintendent*, Facilities, 1982, 1986. B.A., Alabama; B.S., M.S., Auburn
- ASMUTH, JOHN C., *Director*, Aquatics Center, 1993. B.A., Auburn
- ASMUTH, SHAWN C., *Director*, Accounts Payable, 1981, 1989. B.S., M. Ac., Auburn
- ASTON, JOAN C., *President's Secretary*, President's Office, 1991, 1994.
- ATKINSON, DWIGHT S., *Assistant Professor* (English), 1994. B.A., Kenyon; M.Ed., Temple; M.A., Ph.D., Southern California
- AULL, JOHN L., *Professor* (Chemistry), 1974, 1988. A.B., North Carolina; Ph.D., North Carolina State
- AULL, JUDY C., *Senior Academic Advisor* (Comp. Sc. & Engineering), 1980, 1987. B.A., Auburn
- AULT, RICHARD W., *Associate Professor* (Economics), 1983, 1989. A.B., W. Virginia; Ph.D., Virginia
- AVERY, ARTHUR W., *Associate Dean & Professor* (Adm.-Human Sciences), 1985. B.A., M.S., Ph.D., Penn State
- AVSHARIAN, BARBARA A., *Specialist* (Adm.-VP Research), 1975, 1987.
- AYCOCK, GEORGIA P., *Assistant Professor* (Consumer Affairs), 1974, 1982. B.S., M.Ed., Auburn
- BABCOCK, ROBERT A., *Visiting Assistant Professor* (Psychology), 1995. B.A., Oakland; M.S., Ph.D., Massachusetts
- BACKMAN, CAROLE B., *Research Assistant* (Agronomy & Soils), 1992, 1993. B.S., Auburn
- BACKMAN, PAUL A., *Professor* (Plant Pathology), 1971, 1983. Ph.D., California
- BACKSCHEIDER, NICKOLAS A., *Advisor*, Telecomm. & ETV, 1995. B.S., M.S., Ph.D., Purdue; S.T.B., Yale; M.B.A., Rochester
- BACKSCHEIDER, PAULA R., *Emergent Scholar* (English), 1992. B.A., Ph.D., Purdue; M.S., S. Connecticut State
- BAGINSKI, MICHAEL E., *Associate Professor* (Electrical Engineering), 1985, 1991. B.S., M.S., Ph.D., Penn State
- BAGINSKI, THOMAS A., *Associate Professor* (Electrical Engineering), 1984, 1990. B.S., M.S., Ph.D., Penn State
- BAGWELL, KEITH, T., *Manager*, SAC/Coliseum, 1990, 1997. B.A., B.S., Auburn
- BAILEY, ALVIN C., *Adjunct Associate Professor*, USDA Tillage Lab, 1982. B.S., Michigan State; M.S., Illinois; Ph.D., Auburn
- BAILEY, BLISS N., *Network Administrator*, Telecommunications & ETV, 1989, 1996. B.S., New Orleans; M.I.S., Auburn
- BAILEY, ELIZABETH G., *Assistant Director*, Alumni & Development, 1980, 1987.
- BAILEY, LEMUEL C., *Professor* (Agricultural Economics & Rural Sociology), 1985, 1994. B.S., S. Oregon; M.A., Ohio; Ph.D., Cornell
- BAILEY, WILLIAM H., *Assistant Professor* (Geography), 1989, 1990. A.B., M.A., Georgia; Ph.D., Tennessee
- BAIRD, AUBREY N., *Associate Professor* (Large Animal Surgery & Medicine), 1990, 1995. D.V.M. Auburn; M.S., Texas A&M
- BAIRD, SAMERA M., *Associate Professor* (Rehabilitation & Special Education), 1985, 1994. B.S., M.A., Tennessee; Ph.D., Texas
- BAIRD, WILLIAM E., *Associate Professor* (Curriculum & Teaching), 1985, 1990. B.S., M.S., Tennessee; Ph.D., Texas
- BAKER, CHARLES E., *Assistant Trainer*, Athletic Dept., 1991. B.S., Alabama; M.S., Auburn

Faculty and Staff

- BAKER, DIXIE E., *Instructor* (Foreign Language), 1996. B.S., Auburn M.A., Salaman
- BAKER, HENRY J., *Professor & Director, Ritchey Research*, 1991. D.V.M., Auburn
- BAKER, JANET M., *Manager, Registrar's Office*, 1973.
- BAKER, ROYCE, *Superintendent, Coliseum*, 1976, 1986.
- BAKHITAYOV, SAYAVUR I., *Visiting Professor* (Mechanical Engineering), 1995. M.Sc., Ph.D., D.Sc., Azerbaijan
- BAKKER, ERIC, *Assistant Professor* (Chemistry), 1995. Ph.D., Diplom; Zurich;
- BALCH, RUSSELL C., *Instructor* (Political Science), 1995. B.A., Coe; J.D., Michigan
- BALDWIN, STEWART L., *Associate Professor* (Mathematics), 1981, 1989. B.A., Ph.D., Colorado
- BALL, DONALD M., *Professor* (Agronomy & Soils), 1976, 1988. B.S., W. Kentucky; M.S., Ph.D., Auburn
- BANGA, AJAY K., *Associate Professor* (Pharmacological Sciences), 1991, 1995. B.S., M.S., Delhi; M.S., Oklahoma; Ph.D., Rutgers
- BANKSTON, LINDA M., *Administrative Assistant III* (Agronomy & Soils), 1983, 1992.
- BANNON, SUSAN H., *Director* (Learning Resources Center), 1985, 1994. B.S., M.Ed., Auburn; Ed.D., LSU
- BARBAREE, JAMES M., *Associate Professor* (Botany-Microbiology), 1991, 1992. B.S., M.S., Southern Mississippi; Ph.D., Georgia
- BARFIELD, MICHAEL S., *Laboratory Supervisor* (Mechanical Engineering), 1989.
- BARKER, KENNETH N., *Professor & Head* (Pharmacy Care Systems), 1975. B.S., M.S., Florida; Ph.D., Mississippi
- BARKER, LARRY L., *Professor* (Communication), 1975. B.A., M.A., Ph.D., Ohio
- BARKER, WANDA B., *Manager, Student Information Services*, 1975.
- BARNES, MORGAN L., *Associate Electrical Engineer, Architect's Office*, 1994. B.E.E., Auburn
- BARNES, JAMES R., *Advisor, Telecommunications & ETV*, 1995. B.S., M.S., Auburn
- BARNES, PETER A., *Walter Professor* (Physics), 1984. B.A.Sc., M.Sc., Waterloo; Ph.D., Simon Fraser
- BARNES, SHIRLEY L., *Career Counselor, Student Development Services*, 1988. B.A., Auburn; M.Ed., Tuskegee
- BARNES, TENA M., *Project Design Administrator, Utilities*, 1994. B.A., Auburn
- BARNES, TRUDY A., *Research Associate* (Agricultural Economics & Rural Sociology), 1980. B.S., Auburn
- BARNETT, ANDY H., *Associate Professor* (Economics), 1982. B.A., Presbyterian; M.A., Clemson; Ph.D., Virginia
- BARNETT, MARTHA T., *Academic Advisor* (Adm.-Engineering), 1993. B.S., Erskine
- BARNETT, RONALD M., *Assistant Professor* (Aerospace Engineering), 1993. B.S., Ph.D., Kansas; M.S., Maryland
- BARROW, DEBORAH J., *Associate Professor* (Political Science), 1986, 1991. B.A., M.A., Georgia State; Ph.D., Emory
- BARRY, MARY E., *Associate Professor* (Consumer Affairs), 1973, 1983. B.S., St. Joseph; M.S., NYU; Ed.D., Temple
- BARRY, MARY S., *Assistant Professor* (Curriculum & Teaching), 1993. B.S., S.E. Missouri; M.A., N.W. Missouri; Ph.D., Purdue
- BARRY, NANCY H., *Associate Professor* (Curriculum & Teaching), 1990, 1995. B.M., Mid. Tennessee State; M.M., Ph.D., Florida State
- BARRY, THOMAS H., *Instructor* (Geology), 1993, 1996. B.S., E. Carolina
- BARTELS, JAN, *Professor & Head* (Radiology), 1967. B.S., Oregon State; D.V.M., Washington State; M.S., Ontario Veterinary
- BARTH, JAMES R., *Lowder Eminent Scholar & Professor* (Finance), 1989. B.A., Calif. State; M.A., New Mexico; Ph.D., Ohio State
- BARTLETT, RANDALL N., *Assistant Professor* (Industrial Design), 1990, 1996. B.Ind., Auburn; M.P.A., Columbus Col.
- BARTLETT, TOMMY, *Lead Specialist, Alumni & Development*, 1990, 1995. B.S., Athens State
- BARTLETT, WILLIAM T., *Lead Specialist, Alumni Administration*, 1990, 1995. B.S., Athens State
- BARTOL, FRANK F., *Associate Professor* (Animal & Dairy Science), 1983, 1989. B.S., Virginia Tech; M.S., Ph.D., Florida
- BASS, DAVID M., *Advancement Officer I, Alumni & Development*, 1988, 1994. B.S., M.Ed., Auburn
- BASU, MALLICK R., *Senior Research Associate, Asphalt Technology Center*, 1996. B.C.E., Jadavpur
- BAYNE, DAVID R., *Professor* (Fisheries & Allied Aquacultures), 1972, 1991. B.A., Tulane; M.S., Ph.D., Auburn
- BEALES, ROBERT J., *Supervisor* (Forestry), 1978, 1990. B.S., Auburn; M.P.A., AUM
- BEALE, DAVID G., *Associate Professor* (Mechanical Engineering), 1989, 1994. B.S., Michigan Tech; M.S.T., Ph.D., Michigan
- BEAM, DEBORAH R., *Senior Research Associate* (Fisheries & Allied Aquacultures), 1984, 1990. B.S., Southampton; M.Aq., Auburn
- BEAN, LINDA C., *Assistant Professor* (Vocational & Adult Education), 1996. B.S., Arkansas Technical; M.S.E., Central Arkansas; Ed.D., Oklahoma State
- BEARD, GARY B., *Assistant Dean* (Adm.-Veterinary Medicine), 1992. D.V.M., Auburn
- BEARD, THOMAS R., *Associate Professor* (Economics), 1988, 1993. B.A., Tulane; Ph.D., Vanderbilt
- BEASLEY, CYNTHIA, *Associate Editor, Housing & Resident Life*, 1973, 1990. B.A., Auburn
- BECK, DIANE E., *Associate Dean & Professor* (Adm.-Pharmacy), 1979, 1996. B.S.Pharm., Pharm.D., Florida
- BECKER, THEODORE L., *Professor* (Political Science), 1988, 1991. B.A., L.L.B., Rutgers; M.A., Maryland; Ph.D., Northwestern
- BECKETT, DORIS B., *Instructor* (Educational Foundations, Leadership & Technology), 1993. B.S., M.S., Spe., Auburn
- BECKWITH, GUY V., *Associate Professor* (History), 1980, 1988. B.A., M.A., Ph.D., California
- BEHE, BRIDGET K., *Associate Professor* (Horticulture), 1989, 1994. B.S., B.S., Ph.D., Penn State; M.S., Ohio State
- BEHREND, ELLEN N., *Senior Research Associate*, (Physiology & Pharmacology) 1996. V.M.D., Pennsylvania; M.S., Colorado State
- BEIL, RICHARD, *Associate Professor* (Economics), 1988, 1994. B.B.A., Texas Tech; M.S., N. Texas State; Ph.D., Texas A&M
- BELCHER, ASHLEY Y., *Research Assistant* (Agronomy & Soils), 1993, 1994. B.S., Auburn
- BELCHER, JASON, *Research Assistant* (Agronomy & Soils), 1995. B.S., Auburn
- BELCHER, MARK D., *Development Officer I, Alumni Administration*, 1996. B.S., Auburn
- BELK, MARY, *Instructor* (Sociology), 1994. B.A., Auburn
- BELKNAP, ELLEN B., *Senior Research Associate, Animal Health Research*, 1996. D.V.M., Georgia; M.S., Michigan State
- BELKNAP, JAMES K., *Assistant Professor* (Large Animal Surgery & Medicine), 1996. D.U.N., Ph.D., Colorado State; M.S., Michigan State
- BELL, C. REBECCA, *Assistant Director, Housing & Residence Life*, 1984, 1989. B.A., M.Ed., Auburn
- BELL, JOSEPH J., *Superintendent, Facilities*, 1986, 1991.
- BELL, LEONARD, *Assistant Professor* (Nutrition & Food Science), 1994. B.A., Virginia Tech; M.S., Ph.D., Minnesota
- BELL, LINDA W., *Marketing Manager* (Theatre), 1989. B.F.A., Auburn
- BELL, ROBERT M., *Senior Project Manager, Facilities*, 1993, 1994. B.A., Auburn
- BELL, WILLIAM R., *Assistant Manager, Project Construction*, 1994, 1996. B.S., Auburn
- BENEFIELD, LARRY D., *Associate Dean* (Adm.-Engineering) & *Professor* (Civil Engineering), 1979, 1992. B.S.C.E., M.S.C.E., Auburn; Ph.D., Virginia Tech
- BENGTSON, GEORGE W., *Associate Dean & Professor* (Adm.-Forestry), 1991. B.S., LSU; M.F., Duke; Ph.D., Yale
- BENNETT, DONNA V., *Research Associate* (Mathematics), 1980, 1996. B.A., Vanderbilt
- BENNETT, SHERRY D., *Instructor* (Health & Human Performance), 1993, 1996. B.S., B.A., Tennessee Tech; M.S., Tennessee

Faculty and Staff

- BENSON, KATHRYN K., *Clinical Instructor* (Nursing), 1985, B.S.N., Rochester; M.S., Georgetown
- BENTON, DEBRA S., *Manager, Registrar*, 1978, 1986.
- BERGEN, WERNER G., *Professor & Head* (Animal & Dairy Sciences), 1995, B.S., M.S., Ph.D., Ohio State
- BERGER, BRUCE A., *Professor* (Pharmacy Care Systems), 1982, 1989, B.S., M.S., Ph.D., Ohio State
- BERNARD, NANCY M., *Director, Student Development Services*, 1981, 1995, B.S., M.Ed., Auburn
- BERNSTEIN, CYNTHIA, *Associate Professor* (English), 1989, 1993, B.A., Cornell; M.A., Ph.D., Texas A&M
- BERNSTEIN, ROBERT A., *Professor & Chair* (Political Science), 1989, 1995, B.S., M.S., Ph.D., Cornell
- BEST, STEVIE R., *Manager, Space Power Institute*, 1985, 1990, B.S., Auburn
- BEST, TROY L., *Professor* (Zoology-Wildlife Science), 1988, 1996, B.S., E. New Mexico; M.S., Ph.D., Oklahoma
- BETAGERI, GURUPADAPPA V., *Associate Professor* (Pharmaceutical Sciences), 1989, 1994, B.S., Med. College-India; M.S., Gov't Col. of Pharmacy; Ph.D., Alberta
- BETTIS, PAMELA J., *Assistant Professor* (Educational Foundations, Leadership and Technology), 1994, B.A., Virginia; M.Ed., Arkansas; Ph.D., Toledo
- BEVERLY, PAMELA J., *Specialist II*, Information Systems Support, 1989, 1996
- BEYERS, CHRIS T., *Instructor* (English), 1996, B.A., Western Maryland; M.A., Ph.D., Kentucky
- BEZDEK, ANDRAS, *Associate Professor* (Mathematics), 1991, 1992, M.A., Eotvos; Ph.D., Ohio State
- BHAVNANI, SUSHIL H., *Associate Professor* (Mechanical Engineering), 1987, 1993, B.S., Bangalore; M.S., Indian Inst. of Tech (Bombay); Ph.D., Iowa State
- BIBLIS, EVANGELOS J., *Professor* (Forestry), 1965, B.S., Thessaloniki; M.S., D.F., Yale
- BIBLIS, THINA E., *Executive Assistant, University Outreach*, 1995, 1996, B.S., M.Ed., Auburn
- BIGGS, LINDY B., *Associate Professor* (History), 1988, 1994, B.A., M.A., Missouri; Ph.D., MIT
- BILGILI, SACIT F., *Professor* (Poultry Science), 1985, 1996, D.V.M., Ankara; M.Sc., Oregon State; Ph.D., Auburn
- BISHOP, GRACE S., *Instructor* (English), 1995, B.A., M.A., Auburn
- BIRD, RICHARD C., *Professor* (Pathobiology), 1985, 1990, B.S., McMaster; Ph.D., Toronto
- BISHOP, BARBARA A., *Librarian III*, Library, 1988, 1995, B.A., M.A., S. Florida
- BISHOP, ELIZABETH A., *Instructor* (History), 1996, B.A., Earlham; M.A., Northwestern; A.B.D., Chicago
- BISHOP, GRACE S., *Instructor* (English), 1995, B.A., M.A., Auburn
- BIZILIA, KEVAN M., *Manager, Food Services*, 1990, B.S., Troy State
- BLACK, CHRISTINE E., *Supervisor, Library*, 1981, 1990, B.S., Alabama State
- BLACK, JT., *Professor* (Indust. Engineering), 1984, B.S., Lehigh; M.S., W. Virginia; Ph.D., Illinois
- BLACKBURN, CHRISTOPHER A., *Instructor* (History), 1995, B.A., Auburn-Montgomery; M.A., Auburn
- BLACKWELL, GAINES T., *Titled Professor* (Architecture), 1974, 1996, A.B., Alabama; M.F.A., Georgia
- BLAGBURN, BYRON L., *Professor* (Pathobiology), 1982, 1991, B.S., M.S., Andrews; Ph.D., Illinois
- BLAKE, JOHN P., *Associate Professor* (Poultry Science), 1989, 1994, B.S., Penn State; M.S., Maine; Ph.D., Virginia Tech
- BLAKE, JOHN R., *Assistant Director, Financial Reporting*, 1983, 1992, B.S., Auburn
- BLANKENSHIP, EMMETT L., *Instructor* (Zoology-Wildlife Science), 1987, 1995, B.S., M.S., D.V.M., Auburn
- BLANKS, GEORGE W., *Associate Director, Student Affairs*, 1989, 1993, B.A., Samford; M.A., Alabama-Birmingham
- BLASHFIELD, ROGER K., *Professor and Director* (Psychology), 1996, B.S., Ohio State; A.M., Ph.D., Indiana U
- BLAYLOCK, ROBERT E., *Assistant Professor* (Animal & Dairy Science), 1975, 1988, B.S., M.S., Mississippi State
- BLESSING, DANIEL, *Associate Professor* (Health & Human Performance), 1980, 1988, B.A., St. Leo; M.A., Alabama-Birmingham; Ph.D., LSU
- BLEVINS, WILLARD, *Associate Professor* (Botany-Microbiology), 1995, B.S., Appalachian State; M.S., Ph.D., North Carolina State
- BLISS, JOHN C., *Associate Professor* (Forestry), 1990, 1994, B.A., M.S., Ph.D., Wisconsin
- BLOCK, DENNIS H., *Assistant Director, Water Resources Research Inst.*, 1984, B.S., Morningside
- BLOCK, PATRICIA L., *Clinical Instructor* (Nursing), 1993, 1994, B.S.N., M.S.N., Troy State
- BLUMENTHAL, RIK, *Assistant Professor* (Chemistry), 1992, B.S., UCLA; Ph.D., Penn State
- BOAKARI, FRANCIS M., *Visiting Assistant Professor* (Educational Foundations, Leadership & Technology), 1995, B.A., M.A., Ph.D., Iowa
- BOBO, FREDDY R., *Director, Bursar's Office*, 1981, 1990, B.S., Jacksonville State; M.P.A., AUM
- BODIFORD, CYNTHIA L., *Specialist* (Nutrition & Food Science), 1995, B.S., Auburn; M.S., Alabama-Birmingham
- BOHANAN, DONNA J., *Associate Professor* (History), 1982, 1989, B.A., Hendrix; M.A., Ph.D., Emory
- BOLTON, HENRY E., *Assistant Director, Bookstore*, 1989, 1992, B.S., Mobile Col.
- BOLTON, JONATHAN W., *Instructor* (English), 1996, B.A., Miami; M.A., CUNY-Brooklyn; Ph.D., Maryland
- BOMAN, GERALD K., *Instructor* (Civil Engineering), 1988, 1993, B.S., Auburn; M.S., Dayton; M.B.A., Wright State
- BOND, STEPHANIE J., *Associate Editor* (English), 1986, 1994, B.A., M.A., Auburn
- BONE, LEON W., *Adjunct Associate Professor, Reg. Parasite Res. Lab*, 1983, B.S., M.S., Memphis State; Ph.D., Arkansas
- BOOSINGER, MARCIA L., *Librarian III*, Library, 1986, 1992, B.A., M.S., Purdue; M.L.S., Alabama
- BOOSINGER, TIMOTHY R., *Dean of Veterinary Medicine, and Associate Director, Agricultural Experiment Station*, 1983, 1997, D.V.M., Ph.D., Purdue
- BOTHWELL, STEPHANIE E., *Associate Professor* (Architecture), 1994, B.A., Florida International; M.A., Harvard
- BOTTENFIELD, TIMOTHY, *Senior Research Associate* (Forestry), 1988, 1992, B.S., M.S., Michigan Tech
- BOTTJER, KURT, *Adjunct Assistant Professor, Regional Parasite Lab*, 1983, B.S., Ph.D., Notre Dame; M.A., California-Davis
- BOUDREAUX, MARY K., *Associate Professor* (Pathobiology), 1986, 1991, D.V.M., LSU; Ph.D., Cornell
- BOULTON, WILLIAM R., *Olan Mills Professor* (Management), 1990, 1991, B.B.A., M.B.A., Washington; D.B.A., Harvard
- BOWEN, KIRA L., *Associate Professor* (Plant Pathology), 1988, 1993, B.S., Penn State; M.S., Minnesota; Ph.D., Illinois
- BOWMAN, BRIAN L., *Associate Professor* (Civil Engineering), 1989, 1991, B.S., M.S., Ph.D., Wayne State
- BOWMAN, JOE L., *Lead System Programmer* (Adm.-Veterinary Medicine), 1989, 1996, B.S., Jacksonville State
- BOYD, ALESIA D., *Advancement Officer III, Alumni Administration*, 1993, B.S., North Carolina-Greensboro
- BOYD, CLAUDE E., *Professor* (Fisheries & Allied Aquacultures), 1971, B.S., M.S., Mississippi State; Ph.D., Auburn
- BOYD, HENRY G., *Specialist II* (Industrial Design), 1994, B.Ind., Auburn
- BOYD, PAMELA C., *Assistant Professor* (Curriculum & Teaching), 1991, B.S., M.Ed., Georgia State; Ed.D., Mississippi State
- BOYD, ROBERT, *Associate Professor* (Botany-Microbiology), 1988, 1993, B.S., M.S., California State; Ph.D., California-Davis
- BOZACK, MICHAEL J., *Associate Professor* (Physics), 1988, 1994, B.S., M.S., Michigan State; Ph.D., Oregon
- BRACKIN, JEFFREY L., *Facilitator, Auburn Conference Center*, 1991, 1994, B.S., Auburn
- BRADBARD, MARILYN R., *Professor & Head* (Human Development & Family Studies), 1978, 1989, B.S., New Hampshire; M.S., Ph.D., Georgia

Faculty and Staff

- BRADEN, SUSAN R., *Assistant Professor* (Art), 1987, 1988. B.S., Arizona; M.A., Northwestern; Ph.D., Florida State
- BRADEN, TIMOTHY, *Associate Professor* (Physiology & Pharmacology), 1994. B.S., Oklahoma State; Ph.D., Colorado State
- BRADLEY, CHARLES A., *Research Associate* (Forestry), 1995. B.S., M.S., Auburn
- BRADLEY, DINO M., *Research Associate*, Ritchey Research, 1990. B.S., Bennett; D.V.M., Ohio State
- BRADLEY, JAMES T., *Professor & Director* (Zoology-Wildlife Science), 1976, 1981. B.S., Wisconsin; Ph.D., Washington
- BRADY, BOYD, *Coordinator* (Animal & Dairy Science), 1989. B.S. Auburn
- BRADY, PAUL H., *Research Assistant II* (Textile Engineering), 1992, 1996. B.S., Auburn
- BRADY, YOLANDA J., *Associate Professor* (Fisheries & Allied Aquacultures), 1984, 1992. B.S., Mississippi; M.S., Southern Mississippi; Ph.D., Auburn
- BRALY, DAVID K., *Associate Professor* (Architecture), 1987, 1990. B.Arch., B.S.C., Auburn; M.Phil., Cambridge
- BRAMLETT, CAROL H., *Instructor* (Curriculum & Teaching), 1995. B.M.Ed., Murray State; M.Ed., Auburn
- BRAMBLETT, PAULA E., *Specialist II*, Admin. Computing Service, 1993. B.S., Auburn
- BRANCH, CHARLES E., *Professor* (Physiology & Pharmacology), 1970, 1989. B.M.E., Ph.D., Auburn
- BRANDHORST, HENRY W., *Director*, Space Power Institute, 1996. B.S., Oklahoma; Ph.D., Purdue
- BRANDT, JAMES C., *Director*, Graduate Outreach Program, 1987, 1995. B.A., Sou. Florida; M.A., Auburn
- BRANDT, PAUL C., *Visiting Professor* (Building Science), 1993. B.S., M.S., Illinois
- BRANNAN, S. GIOVANA, *Executive Assistant*, VP Research, 1985, 1995.
- BRANNON, EVELYN L., *Associate Professor* (Consumer Affairs), 1980, 1993. B.S., M.S., M.S., Auburn; Ph.D., Tennessee
- BRANSBY, DAVID I., *Titled Professor* (Agronomy & Soils), 1987, 1995. B.S., Ph.D., Natal; M.S., Missouri
- BRAND, KYLE G., *Professor*, Scott-Ritchey Research, 1976, 1984. B.V.Sc., M.V.Sc., Ph.D., Sydney
- BRAWNER, LYDIA C., *Instructor* (Curriculum & Teaching), 1991, 1995. B.A., Wellesley
- BRAWNER, WILLIAM R., *Associate Professor* (Radiology), 1975, 1993. B.S., M.S., Florida; D.V.M., Ph.D., Auburn
- BRAZELTON, NORA E., *Assistant Professor* (Counseling & Counseling Psychology), 1989, 1993. B.A., M.S., Auburn; Ph.D., Georgia State
- BREDDERMAN, PAUL J., *Librarian II*, Library, 1987. B.S., M.S., Ph.D., Cornell; M.L.S., Tennessee
- BREEDLOVE, TRAVIS H., *Supervisor*, Facilities, 1973, 1989.
- BREWER, JESSE W., *Professor* (Entomology), 1987, 1995. B.S., M.A., Central Michigan; Ph.D., Purdue
- BREWER, ROBERT N., *Professor & Head* (Poultry Science), 1968, 1987. B.S., M.S., Auburn; Ph.D., Georgia
- BREWER, WILLIAM G., *Assistant Professor* (Small Animal Surgery & Medicine), 1987. D.V.M., California-Davis
- BRIDGES, CYNTHIA S., *Clinical Instructor* (Nursing), 1995. B.S., Alabama
- BRIDGMAN, C. ROGER, *Laboratory Manager* (Zool.-Wildlife Science), 1978, 1992. B.S., Auburn
- BRINKER, RICHARD W., *Associate Professor* (Forestry), 1988, 1994. B.S., Ph.D., LSU; M.B.A., Southern Mississippi
- BRINSON, SUSAN L., *Associate Professor* (Communication), 1990, 1996. B.A., Cameron; M.A., Ph.D., Missouri
- BRITNELL, RICHARD E., *Assistant Professor* (Industrial Design), 1991, 1994. B.F.A., M.I.D., Auburn
- BROCK, GENIE, *Assistant Vice President*, Alumni Affairs, 1992, 1995. B.A., Auburn
- BROOKS, HARLEY C., *Librarian II & Head*, Library, 1989, 1992. B.A., Lincoln Mem.; M.A., George Peabody
- BROOKS, JACK B., *Supervisor*, Facilities, 1967, 1991.
- BROUGHTON, ROYALL M., *Professor* (Textile Engineering), 1976, 1993. B.S., M.S., Ph.D., North Carolina State
- BROWER, GREGORY L., *Senior Research Associate* (Physiology & Pharmacology), 1995. B.S., D.V.M., Texas A&M
- BROWER, HILDA T., *Professor* (Nursing), 1985, 1988. B.S.N., M.A., Teacher; Ed.D., Nova
- BROWN, ALFRED E., *Associate Professor & Chair* (Botany-Microbiology), 1980, 1996. B.S., Cal. St.-Long Beach; Ph.D., UCLA
- BROWN, CAROLYN B., *Assistant Professor* (English), 1967. B.A., M.A., LSU
- BROWN, CHARLES D., *Associate Professor & Chair* (Philosophy), 1967, 1995. B.A., M.A., LSU; Ph.D., Missouri
- BROWN, CLARENCE D., *Associate Professor* (Rehabilitation & Special Education), 1983, 1989. Ph.D., Georgia
- BROWN, DAN A., *Associate Professor* (Civil Engineering), 1987, 1994. B.S.C., M.S.C.E., Georgia Tech; Ph.D., Texas
- BROWN, DAVID W., *Instructor* (Pathobiology), 1996. B.S., D.V.M., Auburn
- BROWN, ELTON R., *Professor & Director*, Natl. Center Asphalt Tech., 1987, 1995. B.S.C.E., M.S.C.E., Mississippi State; Ph.D., Texas A&M
- BROWN, GENEVA L., *Assistant Professor* (Sociology), 1995. B.A., North Carolina; M.S., Florida State; M.S.W., Alabama; Ph.D., North Carolina-Greensboro
- BROWN, JACK B., *Alumni Professor* (Mathematics), 1967, 1989. B.A., M.S., Ph.D., Texas
- BROWN, JAMES C., *Executive Director*, Minority Advancement and Minority Student Services, 1993, 1997. B.S., M.Ed., Mississippi State; Ed.D., Mississippi
- BROWN, JAMES E., *Associate Professor* (Horticulture), 1985, 1990. B.S., Ft. Valley State; M.S., Tuskegee; Ph.D., Illinois
- BROWN, JANICE D., *Assistant to the Dean* (Adm.-Education), 1973, 1991.
- BROWN, JACQUELINE M., *Clinical Instructor* (Nursing), 1994. B.S.N., Auburn
- BROWN, JERRY E., *Professor & Head*, Journalism, 1979, 1994. B.A., Auburn; M.A., Hollins; Ph.D., Vanderbilt
- BROWN, KAREN W., *Specialist II*, Information Systems Support, 1996. B.S., Troy
- BROWN, MARY H., *Associate Professor & Chair* (Communication), 1983, 1996. B.A., Centenary; M.A., Kentucky; Ph.D., Texas
- BROWN, PHILLIP B., *Instructor* (Communication), 1993. B.A., W. Florida; M.A., Auburn
- BROWN, ROBERT R., *Adjunct Instructor*, USDA Vet. Svc., 1982.
- BROWN, R. TED, *Director*, Purchasing, 1987. B.B.A., M.P.A., Georgia State
- BROWN, SUE J., *Instructor* (Mathematics), 1986. B.A., M.A., Texas
- BROWNING, PHILIP L., *Professor & Head* (Rehabilitation & Special Education), 1989. B.A., Howard Payne; M.A., Texas Tech; Ph.D., Wisconsin
- BRUCE, CHARLES W., *Director*, Treasury Services, 1978, 1991. B.S., North Alabama; B.S., M.Ed., Auburn
- BRUNNER, CINDY J., *Associate Professor* (Pathobiology), 1982, 1994. B.S., D.V.M., Ph.D., Minnesota
- BRUSH, JEANNIE, *Instructor* (Educational Foundations, Leadership & Technology), 1995. B.S., M.S., Indiana
- BRUSH, THOMAS A., *Assistant Professor* (Educational Foundations, Leadership & Technology), 1995. B.A., M.S., Potsdam; Ph.D., Indiana U.
- BRYAN, BARRY J., *Assistant Professor* (Accountancy), 1994. B.S., M.B.A., Arkansas; Ph.D., Texas A&M
- BRYANT, HAMILTON H., *Research Associate* (Agronomy & Soils), 1983, 1991. B.S., M.S., Auburn
- BRYANT, MARY M., *Research Specialist* (Poultry Science), 1983. B.A., Tennessee; M.S., Auburn
- BRYCE, WILLIAM H., *Research Specialist* (Agronomy & Soils), 1993. B.S., Auburn
- BUCHANAN, MICHAEL S., *Civil Engineer*, Asphalt Tech. Ctr., 1995. B.S., Mississippi State
- BUCK, DONALD C., *Associate Professor* (Foreign Languages & Literatures), 1984, 1988. B.A., M.A., Ph.D., Texas
- BUCKHALT, CATHERINE D., *Instructor* (Curriculum & Teaching), 1994. B.S., M.Ed., Auburn

Faculty and Staff

- BUCKHALT, JOSEPH A., *Professor* (Counseling & Counseling Psychology), 1979, 1994. B.A., M.S., Auburn; Ph.D., Peabody
- BUFFORD, GLENDA A., *Academic Advisor* (Adm.-Veterinary Medicine), 1965, 1991
- BULFIN, ROBERT L., *Professor* (Indust. Engineering), 1980, 1994. B.E., M.S., Ph.D., Georgia Tech
- BUMGARDNER, JEAN M., *Accountant III, Assistant Treasurer*, 1989, 1992. B.S., Auburn
- BUNN, EARNST D., *Instructor* (Consumer Affairs), 1988. B.F.A., M.S., Auburn; M.S., Tennessee
- BURCH, KATHERINE B., *Research Assistant* (Plant Pathology), 1986, 1996. B.S., Auburn
- BURCH, THOMAS E., *Visiting Assistant Professor* (Adm.-Engineering), 1992. B.M.E., M.S.M.E., Auburn; Ph.D., LSU
- BURDETTE, CATHY E., *Accountant III, Financial Reporting*, 1994, 1996. B.A., Auburn
- BURDETT, ROBERT A., *Professor, Agronomy & Soils*, 1968, 1988. B.S., M.S., Auburn; Ph.D., Mississippi State
- BURDQ, HENRY B., *Director, External Affairs/ATAC*, 1978, 1990. B.A.M., M.B.A., Auburn
- BURGERING, DREW W., *Assistant Director, Univ. Printing Svc.*, 1984, 1996. B.S., Auburn
- BURGESS, JOHN R., *Director, Foy Union*, 1975, 1990. B.S., M.Ed., Auburn
- BURGESS, ROBERTA L., *Instructor* (English), 1990. B.A., Auburn-Montgomery; M.A., Auburn
- BURKHALTER, BETTYE B., *Interim Vice President for Student Affairs*, 1978, 1995. B.S., M.A., Ed.D., Ph.D., Alabama
- BURKHALTER, JOHN E., *Professor* (Aerospace Engineering), 1972, 1995. B.A.E., M.S., Auburn; Ph.D., Texas
- BURKHALTER, VERLYN, *Director, Contracts & Grants*, 1981, 1989. B.S., Auburn
- BURKHART, BARRY R., *Professor* (Psychology), 1974, 1985. B.S., M.S., Ph.D., Florida State
- BURKHART, MARY Q., *Associate Director, Outreach Program Office*, 1974, 1995. B.S., M.S., Ph.D., Florida State
- BURLESON, DOUGLAS J., *Associate Professor* (Architecture), 1986, 1992. B.E.D., Texas A&M; M.Arch., Rice
- BURLESON, REBECCA C., *Assistant Professor* (Building Science), 1988, 1996. B.S., Auburn
- BURNETT, JOHN R., *Director, University Computing*, 1985, 1986. B.S., N.E. Missouri State
- BURNETT, KATHRYN V., *Senior Academic Advisor* (Adm.-Education), 1980, 1987. B.S., Montevale
- BURNEY, SAMUEL M., *Director, Outreach Programs Office*, 1986, 1993. B.S., West Point; M.S., Georgia Tech
- BURNHAM, MICHELLE, *Assistant Professor* (English), 1994. B.A., Trinity; M.A., SUNY-Buffalo
- BURNS, MARK, *Associate Professor* (Political Science), 1975, 1988. B.A., Lambuth; A.M., Ph.D., Indiana
- BURQUE, ANGELA D., *Extension Program Associate* (Sociology), 1992, 1994. B.S.W., Alabama; M.S.W., Florida State
- BURSON, HERBERT I., *Instructor* (Sociology), 1996. B.A., Huntingdon; M.S., Alabama
- BURSON, SHIRLEY C., *Assistant to the Dean II* (Adm.-Engineering), 1971, 1987
- BURT, EDDIE C., *Adjunct Associate Professor, USDA Tillage Lab.*, 1982. B.S.A.E., Georgia; Ph.D., Auburn
- BURT, KEVIN A., *Contract Administrator, Contracts & Grants Accounting*, 1996. B.S., Auburn
- BURT, LYNN G., *Specialist, Personnel Services*, 1994. B.S., Auburn
- BUSBY, ALLISON L., *Research Associate* (Fisheries & Allied Aquacultures), 1995. B.S., M.S., Auburn
- BUSCHLE-DILLER, GISELA, *Assistant Professor* (Textile Engineering), 1995. Diplom., Ph.D., Stuttgart
- BUSH, GLENDA M., *Instructor* (Curriculum & Teaching), 1996. A.B., Montevale; M.Ed., Auburn
- BUSKIST, WILLIAM F., *Professor* (Psychology), 1982, 1992. B.S., Ph.D., Brigham Young
- BUTLER, DANIEL D., *Associate Professor* (Marketing & Transportation), 1989, 1995. B.S., M.B.A., Central Florida; Ph.D., South Carolina
- BUTLER, JAMIE M., *Laboratory Supervisor* (Pathobiology), 1994, 1996. B.S., Auburn
- BUTLER, P. KYLE, *Manager, Personnel Services*, 1991. B.S., Auburn; M.S., Navy Grad. School
- BUTLER, RICHARD E., *Professor & Head* (Aerospace Studies), 1994. B.S., Air Force Academy; M.S., Georgia College
- BUTTERFIELD, BRIAN P., *Instructor* (Zoology-Wildlife Science), 1988, 1995. B.S., Harding; M.S., Arkansas State
- BUXTON, DONALD F., *Professor* (Anatomy & Histology), 1978, 1993. D.V.M., Auburn; Ph.D., Florida
- BYARS, JOHN, *Manager, Facilities*, 1990. B.S.E.E., Auburn
- BYERS, TERESA, *Visiting Assistant Professor* (Chemistry), 1995. B.S., Illinois; Ph.D., Chicago
- BYRD, DEBBIE C., *Assistant Professor* (Clinical Pharmacy), 1996. B.S., Middle Tennessee State; Pharm.D., Tennessee
- BYRD, DENNIS P., *Manager, Food Services*, 1987, 1996
- BYRD, E. KEITH, *Professor* (Counseling & Counseling Psychology), 1976, 1993. B.A., Asbury; M.S., Virginia Commonwealth; Ph.D., Wisconsin
- BYRD, LINDA W., *Clinical Instructor* (Nursing), 1994. B.S.N., Florida State
- BYRD, PATRICK F., *Assistant Professor* (Military Science), 1995. B.A., Troy State
- BYRD, TERRY A., *Associate Professor* (Management), 1992. B.S., Massachusetts; Ph.D., South Carolina
- BYRNE, GREGORY P., *Assistant Professor & Director* (Music), 1992. B.M., Tennessee; M.M., Mississippi
- CAIRNS, REBECCA S., *Specialist* (Animal & Dairy Sciences), 1994. B.S., Auburn
- CALHOUN, LEE, *Extension Program Associate, Learning Resource Ctr.*, 1988, 1991
- CALL, ARTHUR L., *Director, Food Services*, 1980, 1983
- CALOTT, CHRISTOPHER L., *Visiting Assistant Professor* (Architecture), 1994. B.A., Brown; M.Arch., Princeton
- CALVO, CHARLES M., *Assistant Professor* (Architecture), 1990. B.S., Sou. California; M.A., UCLA
- CAMERON, MARY M., *Assistant Professor* (Sociology), 1992. B.S., Russell Sage; M.A., Ph.D., Michigan State
- CAMMARATA, VINCENZO, *Assistant Professor* (Chemistry), 1991. B.S., Cal Tech; Ph.D., MIT
- CAMP, BARBARA L., *Associate Athletic Director & Senior Women's Administrator, Athletic Department*, 1992. B.S., Texas Tech; M.S., North Texas State
- CAMPAGNA, KEITH D., *Associate Professor* (Clinical Pharmacy), 1978, 1995. B.S.Pharm., Pharm.D., Duquesne
- CAMPBELL, HOWARD L., *Research Specialist* (Plant Pathology), 1984, 1992. B.S., Alabama
- CAMPBELL, OLIVIA A., *Assistant Professor* (Botany-Microbiology), 1973. A.B., Samford; M.S., Ph.D., Auburn
- CAMPBELL, SHARON H., *Art Designer II, Learning Resources Ctr.*, 1985. B.F.A., Auburn
- CANE, JAMES H., *Associate Professor* (Entomology), 1984, 1990. B.S., SUNY; Ph.D., Kansas
- CANNON, J. LEWIS, *Ext. Prog. Associate, Ctr.-Governmental Services*, 1971. B.S., S.F. Austin; M.A., Sam Houston
- CARCACHE, MARIAN M., *Instructor* (English), 1988, 1989. B.A., M.H.S., Ph.D., Auburn
- CAREY, ANTHONY G., *Assistant Professor* (History), 1992. B.A., Central; M.A., Kent State; Ph.D., Emory
- CARINO, HONORIO F., *Associate Professor* (Forestry), 1981, 1988. B.S., M.S., Philippines; Ph.D., Minnesota
- CARLISLE, W. HOMER, *Associate Professor* (Computer Science & Engineering), 1988, 1991. B.A., M.S., Ph.D., Emory
- CARLSON, BETH C., *Manager, Food Services*, 1979, 1995. B.S., Auburn
- CARNEY, JAMIE S., *Assistant Professor* (Counseling & Counseling Psychology), 1991. B.A., M.S., Youngstown State; Ph.D., Ohio State
- CARR, HOUSTON H., *Alumni Associate Professor* (Management), 1989, 1993. B.S.E.E., V.M.I.; M.B.A., M.M.S., TCU; Ph.D., Texas
- CARRIGAN, SARAH D., *Research Associate* (Educational Foundations, Leadership & Technology), 1995. B.A., Depaul; M.S., Indiana State; Ph.D., Kentucky
- CARROLL, CAROL S., *Nursing Supervisor, Student Hlth. Ctr.*, 1991. B.S., Florida State

Faculty and Staff

- CARROLL, MICHAEL W., *Manager* (Animal & Dairy Science), 1982, 1996. B.S., Auburn
- CARSON, ROBERT L., *Associate Professor* (Large Animal Surgery & Medicine), 1978, 1988. D.V.M., Auburn; M.S., Georgia
- CARTEE, ROBERT E., *Associate Professor* (Anatomy & Histology), 1983. B.A., Tennessee; B.S., D.V.M., Kansas State; M.S., Auburn
- CARTER, GERALD, *Specialist III*, (Adm.-Human Sciences), 1996. B.S., Auburn
- CASH, LEE W., *Flight Coordinator* (Aerospace Engineering), 1979. B.S., North Carolina State; M.S., Sou. California
- CASTLE, TAMMY, *Clinical Instructor* (Nursing), 1994. B.S., E. Kentucky
- CATON, LOUIS F., *Instructor* (English), 1996. B.A., California; M.S., Emporia State; Ph.D., Oregon State
- CAUDILL, STEVEN B., *Professor* (Economics), 1981, 1994. B.A., Ohio Wesleyan; M.A., Ph.D., Florida
- CAUDLE, DANA, *Librarian II*, Library, 1992. B.A.; Rice; M.L.I.S., M.L.I.S., Texas
- CAUDLE, NANCY M., *Executive Assistant I*, Alumni & Development, 1978, 1997
- CAUSEY, ANN S., *Instructor* (Philosophy), 1994. B.S., M.S., Auburn
- CAUSEY, M. KEITH, *Professor* (Zoology-Wildlife Science), 1968. B.S., M.S., Ph.D., LSU
- CAVENDER, DOROTHY H., *Associate Dean* (Human Sciences) & *Associate Professor* (Consumer Affairs), 1978, 1996. B.S., M.S., Kentucky; Ed.D., Alabama
- CAYLOR, ARNOLD W., *Research Specialist* (Horticulture), 1987. B.S., M.S., Auburn
- CENTRALLO, CAROL B., *Assistant Professor* (Consumer Affairs), 1992, 1993. B.S., North Alabama; Ph.D., Minnesota
- CEWE-MALLOY, LEFFI, *Instructor* (Building Science), 1990. B.A., Lund; M.Arch., SUNY
- CHABOT, BRUNO, *Visiting Scientist* (Chemical Engineering), 1996. B.S., Laval; M.S.A., Ph.D., Quebec
- CHADWICK, MICHAEL A., *Instructor* (Zoology-Wildlife Science), 1994, 1996
- CHALOKWU, CHRISTOPHER I., *Associate Professor* (Geology), 1984, 1990. B.S., M.S., N.E. Illinois; Ph.D., Miami-Ohio
- CHAMBERS, ROBERT P., *Professor & Head* (Chemical Engineering), 1976. B.S., M.S., Cal. Tech; Ph.D., Berkeley
- CHAMLEE, DARREN S., *Operations Manager*, Auburn Conference Center, 1988, 1996
- CHANDLER, TERESA, *Accountant III*, Food Services, 1989, 1993. B.S., Auburn
- CHANG, KAI-HSIUNG, *Associate Professor* (Computer Science & Engineering), 1988, 1991. E.E., Taipei Inst. Tech; M.S., Ph.D., Cincinnati
- CHAPMAN, RICHARD O., *Assistant Professor* (Computer Science & Engineering), 1993. B.S., Wake Forest; B.A., Oxford; M.S., Ph.D., Cornell
- CHAPPELKA, ARTHUR H., *Associate Professor* (Forestry), 1987, 1993. B.A., M.A., Auburn; M.S., Florida; Ph.D., Virginia Tech
- CHASE, THADDEUS J., *Visiting Associate Professor* (Mechanical Engineering), 1995. D.Sc., D.Sc., Lodz
- CHEN, AN-BAN, *Professor* (Physics), 1974, 1992. B.S., Taiwan Normal; M.S., Ph.D., William & Mary
- CHEN, MONICA L., *Specialist III*, Information Systems, University Computing, 1995. B.B., Fu Jen; M.S., Auburn
- CHERRY, JOE H., *Professor* (Botany-Microbiology), 1989, 1994. B.S., Tennessee; M.S., Ph.D., Illinois
- CHESNUT, RACHEL, *Student Recruiter*, Admissions, 1996. B.S., Auburn
- CHESNUTT, J. THOMAS, *Assistant Professor* (Nutrition & Food Science), 1990. B.A.E., Auburn; M.A., Lehigh; Ed.D., Georgia
- CHIBA, LEE, *Associate Professor* (Animal & Dairy Science), 1990, 1996. B.S., M.S., Ph.D., Nebraska
- CHILDERS, DIANA K., *Academic Advisor* (Adm.-Vet Med), 1992, 1995. B.A., Auburn
- CHILDERS, GARY T., *Manager* (Chemistry), 1983, 1991. B.S., M.Ed., Auburn
- CHILDRESS, BEVERLEY B., *Academic Advisor* (Adm.-Sciences & Mathematics), 1996. B.S., M.A., Alabama
- CHILDRESS, GEORGE B., *Librarian IV*, Library, 1981, 1993. B.A., Virginia Commonwealth; M.A., M.A.S., Alabama
- CHIN, BRYAN A., *Professor* (Mechanical Engineering), 1981, 1986. B.S., Auburn; M.S., Ph.D., Stanford
- CHRIST, LEROY F., *Visiting Assistant Professor* (Accountancy), 1995. B.A., M.B.A., J.D., Wisconsin
- CHRISTENBERRY, CURTIS C., *Adjunct Associate Professor*, Ala. Vet. Diag. Lab., 1982
- CHRISTIAN, MAE P., *Executive Assistant* (Adm.-VP Bus. & Finance), 1976, 1992
- CHURCHIRD, ALLISON E.G., *Research Associate* (Pathobiology), 1987, 1992. B.Sc., McMaster
- CIAMPI, JOSEPH R., *Assistant Director & Women's Basketball Coach*, Athletic Dept., 1979, 1985. B.S., Mansfield
- CICCI, DAVID A., *Associate Professor* (Aerospace Engineering), 1987, 1993. B.S., West Virginia; M.S., Carnegie-Mellon; Ph.D., Texas
- CLABO, DAVID A., *Visiting Assistant Professor* (Chemistry), 1996. B.S., Richmond; Ph.D., California
- CLARK-LEWIS, SANDRA R., *Clinical Instructor* (Communication Disorders), 1974, 1993. B.S., M.S.C., Auburn
- CLARK, ALFRED J., *Associate Professor* (Nutrition & Food Science), 1977. B.S., M.S., Ph.D., Iowa State
- CLARK, C. RANDALL, *Professor* (Pharmaceutical Sciences), 1973, 1988. B.A., Berry; Ph.D., Mississippi
- CLARK, CALEB M., *Professor* (Political Science), 1992, 1995. B.A., Beloit; Ph.D., Illinois
- CLARK, H. DAVID, *Supervisor*, Facilities, 1985, 1989
- CLARK, JAMES A., *Associate Professor* (English), 1982, 1989. B.A., M.A., North Carolina; M.Phil., Ph.D., Yale
- CLARK, JAMES C., *Specialist* (Physics), 1995. B.S., M.S., M.S., Florida
- CLARK, MIRIAM M., *Associate Professor* (English), 1989, 1994. A.B., Missouri; M.A., Ph.D., North Carolina
- CLARK, RONALD L., *Professor & Director* (Accountancy), 1995. B.S., W. Kentucky; M.B.A., Tennessee; Ph.D., Alabama
- CLARK, TERENCE P., *Assistant Professor* (Physiology & Pharmacology), 1994, 1995. D.V.M., Wisconsin; Ph.D., Auburn
- CLARK, WAYNE E., *Professor* (Entomology), 1978, 1990. B.S., M.S., BYU; Ph.D., Texas A&M
- CLARY, JENNIFER L., *Instructor* (Consumer Affairs), 1996. B.S., Judson; M.S., Auburn
- CLAWSON, ROBIN M., *Senior Research Associate* (Forestry), 1992, 1995. B.S., Brigham Young; M.S., Auburn
- CLEM, MARY C., *Assistant Professor* (Consumer Affairs), 1970. B.S., M.S., Auburn
- CLIFTON, S. DIANE, *Associate Editor*, Outreach, 1994, 1996. B.A., B.A., Auburn
- CLONTS, HOWARD A., *Director*, Environmental Institute, 1968, 1996. B.S., M.S., Auburn; Ph.D., Virginia Tech
- CLOTHIAUX, EUGENE, *Professor* (Physics), 1970, 1984. B.S., S.W. Louisiana; M.Litt., Pittsburgh; Ph.D., New Mexico State
- CLOUD, ROBERT E., *Assistant Director*, Telecom. & ETV, 1987. B.E.E., Auburn
- COBB, HENRY C., *Engineer* (VP-Research), 1973. B.E.E., M.E.E., M.B.A., Auburn
- COBB, PATRICIA P., *Professor* (Entomology), 1977, 1988. B.S., Huntingdon; M.S., Ph.D., Auburn
- COBIA, DEBRA C., *Associate Professor* (Counseling & Counseling Psychology), 1990, 1996. Ed.S., W. Georgia; Ph.D., Alabama
- COCHRAN, JOHN E., *Professor & Head* (Aerospace Engineering), 1969, 1993. B.A.E., M.S., Auburn; J.D., Jones Law; Ph.D., Texas
- CODY, REYNOLDS M., *Visiting Associate Professor* (Botany-Microbiology), 1996. B.A., Tennessee; M.S., Ph.D., Mississippi State
- COFIELD, GARRETT R., *Instructor* (Curriculum & Teaching), 1996. B.A., B.M., Birmingham Southern; M.M., Illinois
- COLE, LISA MAE, *Facilitator*, AU Conference Center, 1996. B.A., Auburn
- COLEMAN, DALE A., *Associate Professor* (Animal & Dairy Science), 1984, 1992. B.S., Colorado State; M.S., Ph.D., W. Virginia

- COLLEY, AARON R., *Network Engineer*, University Computing, 1995, 1996. B.S., M.B.A., Auburn
- COLQUITT, LARRY L., *Assistant Professor (Finance)*, 1995. B.S., Auburn; M.B.A., Ph.D., Georgia
- COMPTON, WILLIAM H., *Director*, AU Conference Ctr., 1988. B.S., Mississippi; M.S., Geo. Washington
- COMSTOCK, ALLYSON G., *Associate Professor (Art)*, 1988, 1993. B.A., Occidental; M.F.A., Arizona
- CONDON, MARY L., *Instructor (Curriculum & Teaching)*, 1994. B.A. Kansas State; M.A., Missouri
- CONN, MARY V., *Accountant II*, Contracts & Grants Accounting, 1990, 1994.
- CONNER, DEBORAH S., *Director*, Student Success Center, 1983, 1996. B.S., N. Alabama; M.Ed., Ed.D., Auburn
- CONNER, DONALD E., *Associate Professor (Poultry Science)*, 1989, 1994. B.S., M.S., Ph.D., Georgia
- CONNIFF, MICHAEL L., *Professor (History)*, 1990. B.A., California-Berkeley; M.A., Ph.D., Stanford
- CONRAD, HAROLD N., *Assistant to the Dean (Adm.-Engineering)*, 1978, 1984. B.S., W. Florida; M.Ed., Ed.D.,
- COOK, ALAN R., *Associate Professor (Architecture)*, 1979, 1983. B.Arch., M.Arch., Nebraska
- COOK, BETTY A., *Instructor (Curriculum & Teaching)*, 1996. B.S., M.Ed., Auburn
- COOK, FELICIA A., *Specialist II*, Financial Information Systems, 1992, 1993. B.A., Talladega Col.
- COOK, JAMES P., *Assistant Dean (Adm.-Business)*, 1988, 1993. B.S., M.A., Auburn
- COOK, JOHN A., *Assistant Professor (Coop. Ext.)*, 1980, 1991. B.S., M.S., Mississippi State; Ed.D., Auburn
- COOK, ROBERT B., *Professor & Head (Geology)*, 1972, 1984. E.M., Colorado Mines; M.S., Ph.D., Georgia
- COOK, VALARIE, *Lead Specialist*, Univ. Computing, 1989, 1996. B.S., Auburn
- COOLEY, BOBBY R., *Producer/Director IV*, Telecom. & ETV, 1976, 1992. B.A., M.S.C., Auburn
- COOLEY, LARRY A., *Research Assistant II*, Asphalt Technology Ctr., 1996. B.S., Mississippi State
- COOPER, NADINE H., *Coordinator (Health & Human Performance)*, 1966, 1990.
- COOPER, THOMAS E., *Associate Professor (Building Science)*, 1984, 1991. B.C.E., M.S., Auburn
- CORBIN, JOHN S., *Assistant Manager*, Food Services, 1990.
- CORLEY, GREGG R., *Assistant Professor (Building Science)*, 1995. B.S., M.S., Clemson
- CORSBY, CAROLE A., *Laboratory Supervisor (Botany-Microbiology)*, 1976, 1996. B.S., M.A., Auburn
- COSBY, GEORGE D., *Supervisor*, Facilities, 1970, 1985.
- COSBY, HARRIET D., *Lead Specialist*, Library, 1995. M.Ed., Auburn
- COTTIER, JOHN W., *Associate Professor (Sociology)*, 1976, 1987. B.A., Auburn; M.A., Alabama; Ph.D., Missouri
- COTTON, JANICE N., *Assistant Professor & Director (Human Development & Family Studies)*, 1995. B.S., Ed.S., Alabama; M.S., Samford; Ph.D., Alabama-Birmingham
- COUCH, WILLIAM E., *Specialist*, Learning Resources Ctr., 1986, 1991.
- COULTER, ROBERT B., *Specialist III*, Purchasing, 1989. B.S., Auburn
- COURTNEY, ANGELA, *Librarian II*, Library, 1996. B.A., James Madison; M.L.I.S., Texas; M.A., Georgia
- COURTNEY, Pharmacist (Adm.-Pharmacy), 1996. B.S., Auburn
- COX, DWAYNE D., *Archivist III & Head*, Library, 1986, 1992. B.A., Kentucky Wesleyan; M.A., Louisville; Ph.D., Kentucky
- COX, NANCY R., *Associate Professor & Director*, Scott-Ritchey Research, 1985, 1996. B.S., D.V.M., Texas A&M; M.S., Auburn; Ph.D., Alabama-Birmingham
- COX, WILLIAM F., *Manager*, Athletic Dept., 1977. B.S., Auburn
- CRABTREE, BILLY J., *Assistant Manager (Chemical Engineering)*, 1984, 1992.
- CRAIG-SCHMIDT, MARGARET C., *Associate Professor (Nutrition & Food Science)*, 1977. A.B., Duke; Ph.D., Wisconsin
- CRANDELL, GEORGE W., *Associate Professor (English)*, 1988, 1994. B.A., North Carolina; M.A., Ph.D., Texas
- CRAWFORD, BRETT A., *Instructor (Theatre)*, 1994. B.S., Northwestern; M.F.A., Texas Tech
- CRAWFORD, CHARLES J., *Superintendent*, Facilities, 1975, 1986. B.A., B.S., M.A., Auburn
- CRAYTON, EVELYN F., *Associate Professor (Nutrition & Food Science)*, 1977, 1982. B.S., Grambling; M.S., St. Louis; Ed.D., Auburn
- CRESSLER, JOHN D., *Associate Professor (Electrical Engineering)*, 1992. B.S., Georgia Tech; M.S., Ph.D., Columbia
- CREWS, JERRY R., *Associate Professor (Agricultural Economics & Rural Sociology)*, 1977, 1988. B.S., M.S., Georgia; Ph.D., Auburn
- CRITCHFIELD, KARLA D., *Assistant Professor (Psychology)*, 1993, 1995. B.S., New York; M.A., Ph.D., West Virginia
- CRITCHFIELD, THOMAS S., *Associate Professor (Psychology)*, 1991, 1995. B.A., M.A., Ph.D., W. Virginia
- CROCKER, MALCOLM J., *Distinguished University Professor (Mechanical Engineering)*, 1983, 1990. B.S., M.S., Southampton; Ph.D., Liverpool
- CROCKER, RUTH C., *Associate Professor (History)*, 1983, 1993. B.A., Oxford; M.A., Ph.D., Purdue
- CROMWELL, ELIZABETH W., *Senior Auditor*, Internal Auditing, 1993. B.S., Virginia Tech
- CRONENBERG, ALLEN T., *Associate Professor & Director (Ctr. for Arts & Humanities)*, 1968, 1996. B.A., M.A., North Carolina; Ph.D., Stanford
- CROSS, JAMES H., *Professor & Chair (Computer Science & Engineering)*, 1986, 1997. B.S., Houston; M.S., Sam Houston; Ph.D., Texas A&M
- CROWLEY, LARRY G., *Assistant Professor (Civil Engineering)*, 1992. B.S., Ph.D., Texas A&M; M.B.A., Texas Christian
- CRUTCHLEY, CLAIRE, *Associate Professor (Finance)*, 1989, 1996. B.S., M.A., Ph.D., Virginia Tech
- CRUTCHLEY, DARRELL L., *Instructor (Adm.-Business)*, 1992. B.S., M.B.A., Virginia Tech
- CRYSTAL, JILL A., *Associate Professor (Political Science)*, 1994, 1996. B.A., Cornell; M.A., Ph.D., Harvard
- CULLINAN, HARRY T., *Director & Professor*, Pulp & Paper Res. Ctr., 1991, 1995. B.S. Che., Detroit; M.S. Che., Ph.D., Carnegie
- CUMBEY, JACK A., *Visiting Professor (Philosophy)*, 1995.
- CUMMINS, KEITH A., *Professor (Animal & Dairy Science)*, 1980, 1994. B.S., M.S., Washington State; Ph.D., Virginia Tech
- CUNNINGHAM, DONALD H., *Professor (English)*, 1989. B.A., M.A., Ph.D., Missouri
- CUNNINGHAM, JEROME H., *Instructor (Music)*, 1995. B.S., M.M.E., Auburn
- CUPP, EDDIE W., *Professor & Head (Entomology)*, 1995. B.A., Murray State; Ph.D., Illinois
- CURTIS, CHRISTINE W., *Alumni Professor (Chemical Engineering)*, 1976, 1993. B.S., Mercer; M.S., Ph.D., Florida State
- CURTIS, LARRY M., *Professor (Agricultural Engineering)*, 1976. B.S., M.S., Auburn
- CUTCHINS, MALCOLM A., *Professor (Aerospace Engineering)*, 1966. B.S., M.S., Ph.D., Virginia Tech
- DAHL, HARVEY O., *Director*, University Printing Service, 1996. A.S., North Dakota State; Ph.B., North Dakota
- DALE, PAULA W., *Specialist II*, University Computing, 1992, 1994.
- DALE, SUSAN, *Research Assistant (Animal & Dairy Sciences)*, 1994. B.S., Auburn
- D'ANDREA, GEORGE H., *Adjunct Instructor*, Ala. Vet. Diag. Lab., 1982. D.V.M., M.S., Auburn
- DANE, FENNECHIANA K., *Assistant Professor (Horticulture)*, 1995. B.S., Wageningen; M.S., New Mexico State; Ph.D., Colorado
- DANE, JACOB H., *Professor (Agronomy & Soils)*, 1976, 1987. B.S., Netherlands; M.S., New Mexico State; Ph.D., Colorado State
- DANIELL, HENRY, *Associate Professor (Botany-Microbiology)*, 1991, 1992. B.S., M.S., Ph.D., Madras
- DANIELS, MARGARET M., *Associate Professor (Mathematics)*, 1985, 1990. B.S., Maharishi Int.; M.S., Ph.D., Auburn

Faculty and Staff

- DANIELS, SELDON A., *Assistant Professor* (Health & Human Performance), 1972. B.S., Lincoln Mem.; M.S., Kearney State; Ph.D., New Mexico
- DARCH, CRAIG B., *Professor* (Rehabilitation & Special Education), 1982, 1991. B.S., M.S., Wisconsin; Ph.D., Oregon
- DARK, SUSAN D., *Instructor* (Curriculum & Teaching), 1993. B.S., M.Ed., Auburn
- DARON, CAROL F., *Assistant Provost* (Provost Office), 1974, 1994. B.A., Huntingdon; M.A., Florida State; Ph.D., Auburn
- DAUGHTREY, TERRELL W., *Director*, University Computing, 1979, 1986. B.S., M.S., Auburn, M.S., West Coast
- DAVENPORT, GARY M., *Associate Professor* (Animal & Dairy Science), 1989, 1995. B.S., M.S., Ph.D., Kentucky
- DAVENPORT, JOANNA, *Professor* (Health & Human Performance), 1987, 1993. B.S., Skidmore; M.S., Smith; Ph.D., Ohio State
- DAVENPORT, MARK, *Instructor* (Educational Foundations, Leadership & Technology), 1988, 1994. B.A., Mesa; M.S., Auburn
- DAVIDSON, WILLIAM M., *Assistant Athletic Director*, Athletic Dept., 1984, 1994. B.S., Auburn
- DAVINO, DONALD R., *Producer/Director III* (Adm.-Pharmacy), 1993. B.A., Auburn
- DAVIS, C. GRANT, *Assistant Vice President*, Student Life, 1978, 1996. B.S., M.Ed., Auburn
- DAVIS, KERMIT R., *Associate Professor* (Management), 1979, 1985. B.S., M.B.A., Mississippi State; Ph.D., Georgia
- DAVIS, NICHOLAS D., *Professor* (Architecture), 1963, 1987. B.A., B.Arch., Rice; M.F.Arch., Princeton
- DAVIS, ROBERT G., *Director*, External Program Development, VP for Research, 1993. B.S., Auburn
- DAVIS, TERRY C., *Assistant Professor* (Forestry), 1965. B.S., M.S., Virginia Tech; Ph.D., W. Virginia
- DAVIS, WILLIAM H., *Professor* (Philosophy), 1966. B.A., M.A., Abilene Christian; Ph.D., Rice
- DAVIS, ZOIA, *Research Associate*, Ctr. Governmental Services, 1989, 1990. B.S., Loyola; M.S., Auburn
- DAWSEY, CYRUS B., *Professor & Chair* (Geography), 1975, 1994. B.S., M.A., Florida State; Ph.D., Florida
- DAWSON, PATSY L., *Program Developer II* (Rehabilitation & Special Education), 1989
- DE GROOT, WILHELMUS M., *Manager*, University Computing Services, 1982, 1983. B.A., Troy State
- DEEN, MARVIN E., *Manager*, Athletic Dept., 1980, 1993. B.S., B.S., Auburn
- DEGRAVES, FRED J., *Assistant Professor* (Large Animal Surgery & Medicine), 1991. B.S., D.V.M., Michigan State; Ph.D., North Carolina State
- DELLINGER, LAFAYE E., *Catering Manager*, Food Services, 1982, 1994
- DELLINGER, RICHARD E., *Assistant Professor* (Aerospace Engineering), 1990. B.S., Ball State; M.A., E. Michigan
- DELOACH, THOMAS H., *Instructor* (Industrial Design), 1995. B.Ind., Auburn
- DEMAINE, MARGARET, *Visiting Assistant Professor* (Chemistry), 1992, 1994. B.A., M.S., British Columbia; Ph.D., Cambridge
- DEMENT, BETTY M., *Vice President for Alumni & Development*, 1973, 1995. B.S., M.A., Auburn
- DEMENT, R. MICHAEL, *Art Designer II*, Alumni & Development, 1985, 1994. B.F.A., M.A., Alabama
- DENNEY, THOMAS S., *Assistant Professor* (Electrical Engineering), 1994. B.S., M.S., Auburn; Ph.D., Johns Hopkins
- DENNIS, DOROTHY F., *Administrative Assistant III*, Athletic Dept., 1981, 1987
- DENT, WILLIAM D., *Specialist III*, University Computing, 1994. B.S., Southern Mississippi; M.Mis., Auburn
- DERUITER, JACK, *Professor* (Pharmaceutical Science), 1983, 1988. B.A., Hope; M.S., Michigan; Ph.D., Virginia Commonwealth
- DESOUZA, GERALDO S., *Professor* (Mathematics), 1982, 1993. B.S., Pernambuco; M.S., Rochester; Ph.D., SUNY
- DEUTSCH, JANET S., *Clinical Instructor* (Nursing), 1994. B.A., Houghton; B.S.N., M.Ed., Auburn
- DEVRIES, DENNIS, *Associate Professor* (Fisheries & Allied Aquacultures), 1990, 1994. B.S., Purdue; M.S., Ph.D., Ohio State
- DEWITT, JAMES G., *Laboratory Manager* (Art), 1983. B.A., Auburn-Montgomery
- DEYTON, DIANA E., *Assistant Chief Flight Instructor*, AU Aviation, 1984, 1990. B.A., Auburn
- DI JULIO, JOHN P., *Producer/Director III*, Telecom. & ETV, 1989, 1993. B.A., Kutztown
- DIAMOND, DOUGLAS K., *Public Health Environmentalist*, Student Health Ctr., 1975. B.S., Auburn
- DICKSON, THOMAS I., *Professor* (Political Science), 1968, 1992. B.A., M.A., Ph.D., Texas
- DIDION, DAVID A., *Assistant Athletic Director*, Athletic Department, 1995. B.Sc., Ohio State
- DILLARD, CAROL, *Registered Dietitian*, Drake Health Ctr., 1974, 1993. B.S., Jacksonville State; M.S., Troy State-Montgomery
- DILLON, ALLEN R., *Professor* (Small Animal Surgery & Medicine), 1973, 1987. B.S., D.V.M., Texas A&M; M.S., Auburn
- DILLON, CATHERINE N., *Pharmacist* (Large Animal Surgery & Medicine), 1989. B.S., Auburn
- DING, ZHI, *Associate Professor* (Electrical Engineering), 1990, 1995. B.Eng., Nanjing; M.S., Toronto; Ph.D., Cornell
- DIXON, KENDALL L., *Instructor* (Management), 1996
- DOBSON, F. STEPHEN, *Associate Professor* (Zoology-Wildlife Science), 1988, 1994. A.B., M.A., California; Ph.D., Michigan
- DODGE, TIMOTHY, *Librarian II*, Library, 1992. B.A., Swarthmore; M.A., Ph.D., New Hampshire; M.L.S., Columbia
- DONALD, JAMES O., *Professor* (Agricultural Engineering), 1976, 1988. B.S., M.S., Georgia
- DONALD, TRACY D., *Specialist*, Students with Disabilities, 1995. B.S., M.S., Auburn
- DONNELLY, ROBERT A., *Associate Professor* (Chemistry), 1979, 1986. B.S., M.S., New Orleans; Ph.D., North Carolina
- DOORENBOS, NORMAN J., *Professor* (Pharmaceutical Sciences), 1986, 1995. B.S., M.S., Ph.D., Michigan
- DORMAN, DEBORAH B., *Specialist III*, Purchasing, 1994. B.S., Alabama
- DORMITORIO, TERESA V., *Research Associate* (Poultry Science), 1990. B.S., M.S., Philippines
- DOWDELL, LOUIS, *Assistant Manager*, Food Services, 1968, 1988
- DOWDY, TRACY A., *Coordinator*, Alumni & Development, 1992, 1996. B.S., Auburn
- DOWNER, SHERIDA H., *Librarian III & Head*, Library, 1978, 1992. B.A., Geo. Williams; M.A.L.S., Rosary
- DOWNES, JEREMY M., *Associate Professor* (English), 1991, 1996. B.A., Chicago; M.A., Ph.D., Wisconsin
- DOZIER, WILLIAM A., *Professor & Chair* (Horticulture), 1971, 1995. B.S., M.S., Auburn; Ph.D., Virginia Tech
- DRAKE, DENNIS C., *Associate Director*, Student Development Services, 1974, 1990. B.A., M.Ed., Ed.S., Auburn
- DRAKE, E. JANE, *Art Designer II* (Adm.-Pharmacy), 1990. B.A., Auburn
- DRAKE, KYLE S., *Assistant Vice President*, Adm.-Facilities, 1983, 1993. B.S., Alabama
- DRAKE, NELL R., *Instructor* (Management), 1995, 1996. B.A., M.S., M.Ed., Auburn
- DREYFUS, MARIELA B., *Assistant Professor* (Foreign Languages & Literatures), 1995, 1996. B.A., M.A., Nacion Mayo; Ph.D., Columbia
- DUBOIS, MARK R., *Assistant Professor* (Forestry), 1994. B.S., Kansas State; B.S., Arizona; M.S., Missouri; Ph.D., Mississippi State
- DUFFIELD, SHEILA R., *Assistant Director*, Contracts & Grants, 1987, 1994. B.S., Alabama
- DUFFY, PATRICIA A., *Professor* (Agricultural Economics & Rural Sociology), 1985, 1995. B.A., Boston College; Ph.D., Texas A&M
- DUGAS, RAY B., *Professor* (Art), 1974, 1987. B.F.A., LSU; M.V.A., Georgia State
- DUGGAN, DARA M., *Instructor* (English), 1994. B.A., M.A., Auburn
- DUKE, STEVE R., *Assistant Professor* (Chemical Engineering), 1996. B.S., Georgia Tech; M.S., Ph.D., Illinois
- DUNAWAY, BELMA, *Supervisor*, Facilities, 1986
- DUNCAN, BRYAN L., *Professor & Director* (Adm.-Agriculture), 1975, 1989. B.A., Pittsburgh State; Ph.D., Wayne State
- DUNHAM, REX A., *Professor* (Fisheries & Allied Aquacultures), 1980, 1992. B.S., Illinois; M.S., Ph.D., Auburn

Faculty and Staff

- DUNKELBERGER, JOHN E., *Professor* (Agricultural Economics & Rural Sociology), 1962, 1982. M.S., Penn State; Ph.D., Mississippi State
- DUNKER, MARILYNN, *Librarian II*, Library, 1995. B.S., Michigan Tech; M.S., Indiana
- DUNLOP, ALEXANDER W., *Associate Professor* (English), 1972, 1990. B.A., Hobart; M.A., Ph.D., North Carolina
- DUNLOP, FRANCIS W., *Instructor* (Art), 1995. B.F.A., Corcoran
- DUNN, CAROLINE, *Assistant Professor* (Rehabilitation & Special Education), 1991. B.S., Miami; M.Ed., Ph.D., Texas
- DUNN, ROBERT L., *Instructor* (Accountancy), 1995. B.S., Auburn; M.B.A., Auburn-Montgomery
- DURAN, SUE H., *Associate Professor* (Large Animal Surgery & Medicine), 1975, 1995. B.S., M.S., Auburn
- DURBIN, KIM M., *Director*, Cooperative Education, 1981, 1993. B.S., M.Ed., Auburn
- DURROH, C. LATISHA, *Coordinator*, Outreach Program, 1983, 1996. B.A., Auburn
- DUTE, ROLAND R., *Professor & Chair* (Botany-Microbiology), 1982, 1993. B.S., M.S., Ohio State; Ph.D., Wisconsin
- DYAS, LAURA S., *Pharmacist* (Adm.-Pharmacy), 1996. B.S., Auburn
- DYER, DAVID F., *Professor & Chair* (Mechanical Engineering), 1965, 1995. B.S.M.E., Tennessee; M.S.M.E., Ph.D., Georgia Tech
- DYIES, MILTON, *Specialist III*, Admin. Computing Services, 1983, 1992. B.S., Alabama A&M
- DYKSTAL, TIMOTHY, *Assistant Professor* (English), 1991. B.A., Wisconsin; M.A., Ph.D., Chicago
- DYKSTRA, CHRISTINE C., *Associate Professor* (Pathobiology), 1995. A.B., Sweetbriar; M.S., Florida; Ph.D., Georgia
- EAKES, DONALD J., *Associate Professor* (Horticulture), 1989, 1994. B.S., M.S., Auburn; Ph.D., Virginia Tech
- EARLE, BILLY W., *Contract Administrator*, VP for Research, 1992. B.S., Alabama
- EASTERDAY, KENNETH E., *Professor* (Curriculum & Teaching), 1964. B.S., M.A.T., Indiana; Ed.D., Western Reserve
- EAVES, RONALD C., *Professor* (Rehabilitation & Special Education), 1977, 1982. B.A., M.Ed., Florida; Ph.D., Georgia
- EBEL, ROBERT C., *Assistant Professor* (Horticulture), 1997
- EBERT, ROBERT A., *Extension Specialist* (Animal & Dairy Science), 1985, 1995. B.S., Kansas State; M.Ed., Auburn
- ECKMAN, MICHAEL K., *Professor* (Poultry Science), 1977, 1988. B.A., M.A., Colorado; Ph.D., Auburn
- EDGE, CINDY, *Supervisor*, Institute for Biological Detection Systems, 1996. B.S., Winthrop
- EDGINGTON, WILLIAM D., *Assistant Professor* (Curriculum & Teaching), 1996. B.S.Ed., Texas Christian; M.Ed., Midwestern State; Ed.D., Oklahoma State
- EDMISTON, FRED W., *Librarian II*, Library, 1986. B.S., Spring Hill; M.A., Mississippi; M.L.S., Southern Mississippi
- EDMONDS, CHARLES, *Professor* (Finance), 1973, 1983. B.A., M.S.A., Auburn; Ph.D., Arkansas
- EDWARDS, JAMES H., *Adjunct Associate Professor* (Agronomy & Soils), 1982. B.S., M.S., Georgia; Ph.D., North Carolina State
- EDWARDS, WALTER D., *Lead Systems Programmer*, Univ. Computing, 1989, 1991. B.S., Columbus
- EKELUND, ROBERT B., *Lowder Eminent Scholar & Professor* (Economics), 1979, 1988. B.B.A., M.A., Ph.D., LSU
- EL-HALWAGI, MAHMOUD, *Associate Professor* (Chemical Engineering), 1990, 1994. B.Sc., M.Sc., Cairo; Ph.D., California
- EL-MOGAHZY, YEHIA E., *Associate Professor* (Textile Engineering), 1986, 1992. B.Sc., M.Sc., Alexandria; Ph.D., North Carolina State
- EL-SHEIKH, MONA M., *Associate Professor* (Psychology), 1990, 1995. B.A., American; M.A., Ph.D., West Virginia
- ELDER, THOMAS J., *Associate Professor* (Forestry), 1979, 1985. B.S., SMU; M.F., S.F. Austin; Ph.D., Texas A&M
- ELFSTROM, GERARD A., *Associate Professor* (Philosophy), 1988, 1992. B.A., Cornell; M.A., Ph.D., Ph.D., Emory
- ELKINS, CHARLES B., *Superintendent*, Plant Growth Center, 1991, 1994. B.S., M.S., Georgia
- ELLIS, CHARLES D., *Manager*, Microelectronic (Electrical Engineering), 1986, 1990. B.S.E.E., M.S.E.E., Auburn
- ELLIS, KIMBERLY D., *Development Coordinator I*, Alumni Administration, 1996. B.S., Auburn
- ELLIS, PATRICIA R., *Associate Director*, Student Health Ctr., 1981, 1990. B.S., Ed.D., Alabama; M.S., California
- ELLISON, KATHY JO, *Assistant Professor* (Nursing), 1990. B.S.N., Tennessee; M.S.N., Alabama-Birmingham
- ELSEA, STEPHANIE H., *Multimedia Specialist*, University Relations, 1994, 1996. B.A., Auburn
- ELTON, DAVID J., *Associate Professor* (Civil Engineering), 1985, 1992. B.S., Clarkson; M.S., Utah State; Ph.D., Purdue
- EMMONS, MITCH, *Associate Editor*, University Relations, 1992, 1994. B.S., North Alabama
- EMORY, AIMEE J., *Research Assistant* (Fisheries & Allied Aquacultures), 1993, 1996. B.S., Salisbury State
- EMORY-YOUNG, HELEN G., *Research Assistant II* (Fisheries & Allied Aquacultures), 1993, 1996. B.S., Salisbury State
- ENEBAK, SCOTT A., *Assistant Professor* (Forestry), 1995. B.S., M.S., Minnesota; Ph.D., West Virginia
- ENGEL, JEFFREY A., *Specialist II*, Information Systems, University Computing, 1994, 1995. B.S., Auburn
- ENGLISH, SUE P., *Manager*, Chemistry, 1975, 1995. B.S., Auburn
- ENLOE, LEE H., *Assistant Professor* (Military Science), 1996. B.A., Southern Illinois
- ENSMINGER, STEPHEN S., *Manager*, ID Card Ctr., 1987. B.S., Auburn
- ENTRY, JAMES A., *Assistant Professor* (Agronomy & Soils), 1993. B.S., B.A., Montana; M.S., Idaho; Ph.D., Oregon State
- EPPELSON, H. BRADLEY, *Instructor* (Architecture), 1987, 1993. B.I.D., Auburn
- EPPELSON, ROBERT A., *Instructor* (Philosophy), 1993. B.A., Illinois State; M.A., Rochester
- ERLANDSON, ANGELA H., *Manager*, Personnel Services, 1990, 1996. B.S., Auburn
- ESCARPANTER, JOSÉ A., *Professor* (Foreign Languages & Literatures), 1982, 1985. Ph.D., Havana
- ESSAH, PATIENCE, *Associate Professor* (History), 1990, 1995. B.A., Ghana; M.A., Ph.D., California
- ESTRIDGE, BARBARA H., *Research Associate* (Zoology-Wildlife Science), 1980, 1987. B.S., Auburn
- ETHERIDGE, JEFFREY D., *Manager*, Photographic Services, 1991, 1994
- ETTEN, TAMRYN J., *Instructor* (Sociology), 1994. B.A., Notre Dame; M.S., Florida State
- EVANS, DENNIS A., *Professor*, Coop. Ext., 1977, 1984. B.A., NW Louisiana; M.A., Ed.D., LSU; M.B.A., Auburn
- EVANS, MARY BETH, *Instructor* (Philosophy), 1994. B.A., Auburn
- EVANS, PATRICIA J., *Instructor* (Accountancy), 1982. B.S., M.S., Auburn
- EVANS, R. LEE, *Dean and Professor* (Adm.-Pharmacy), 1994. B.S., Georgia; Pharm.D., Tennessee
- EVEREST, JOHN W., *Professor* (Agronomy & Soils), 1976, 1993. B.S., Alabama; M.S., Ph.D., Auburn
- EWALD, MARY LOU, *Extension Program Associate* (Physics), 1995, 1996. B.S., Auburn
- EWALD, SANDRA J., *Professor* (Poultry Science), 1990, 1996. B.A., Ph.D., Texas
- FABEL, ROBIN F.A., *Professor* (History), 1969, 1989. B.A., M.A., Oxford; Ph.D., Auburn
- FADOOL, DEBRA A., *Assistant Professor* (Zoology-Wildlife Science), 1996
- FAIRLEY, LAURA N., *Assistant Professor* (Journalism), 1992. B.A., Mississippi Women's; M.A., Alabama
- FARRELL, ROBIN C.G., *Nurse Practitioner*, Student Hlth. Ctr., 1987. B.S.N., AUM; M.S.N., Alabama-Birmingham
- FAUPEL, CHARLES E., *Professor* (Sociology), 1983, 1994. B.A., Asbury; M.A., Cent. Mich.; Ph.D., Delaware
- FAUST, RANDALL E., *Professor* (Music), 1982, 1994. B.S., E. Michigan; M.M., Mankato State; D.M.A., Iowa
- FAUST, ROBERT L., *Professor* (Architecture), 1968, 1982. B.A., Oklahoma
- FEILD, HUBERT S., *Lowder Professor* (Management), 1973, 1987. B.S., M.S., Mississippi State; Ph.D., Georgia

Faculty and Staff

- FELKEY, BILL G., *Associate Professor* (Pharmacy Care Systems), 1977, 1995. B.A., Maine; M.S., Indiana Univ.
- FELLERS, JOHN D., *Specialist, Distance Learning & Outreach*, 1994, 1995. B.S., Oklahoma; M.S., Florida State
- FELLERS, ROBIN B., *Assistant Professor* (Nutrition & Food Science), 1988. Diplom., Ohio; M.S., Kansas State; Ph.D., Florida
- FELLOWS, HUGH L., *Senior Research Associate* (Chemical Engineering), 1984. B.S., M.S., Auburn
- FELLOWS, PAUL D., *Manager* (Chemical Engineering), 1987. B.A., Jacksonville State
- FEMINELLA, JOHN W., *Assistant Professor* (Zool.-Wildlife), 1991. B.S., M.S., N. Texas; Ph.D., California
- FENDLEY, BETTY J., *Assistant Dean* (Arch.-Architecture), 1972, 1993. B.A., Tusculum; M.Ed., Auburn
- FERGUS, JEFFREY W., *Assistant Professor* (Mechanical Engineering), 1992. B.S., Illinois; Ph.D., Pennsylvania
- FERGUSON, JIMMY D., *Vice President for Administrative Services*, 1993. B.S., M.B.A., Ph.D., Texas A&M
- FERGUSON, VENALDA B., *Instructor* (Foreign Language), 1992. B.A., Auburn
- FEURRIEGEL, RICHARD F., *Network Engineer* (Adm.-Agriculture), 1996. B.S., Auburn
- FIELDS, KENT T., *Titled Professor* (Accountancy), 1984, 1996. B.B.A., N. Texas; M.P.A., Texas; Ph.D., Texas A&M
- FJOLEK, HILARY G., *Visiting Assistant Professor* (Chemistry), 1996. B.S., Illinois; Ph.D., Penn State
- FIKES, DEBRA C., *Clinical Instructor* (Nursing), 1996. B.S.N., Auburn; B.S.W., M.S.W., Alabama
- FILES, ELIZABETH A., *Radiological Associate* (Radiology), 1990.
- FILLIPPELI, SUSAN E., *Assistant Professor* (Communication), 1994. B.A., Appalachian State; M.A., Georgia; Ph.D., Iowa
- FINDORFF, KARL J., *Network Engineer*, University Computing, 1994, 1996. B.S., Auburn; M.B.A., Auburn
- FINKEN, BRYAN W., *Instructor* (Philosophy), 1996. B.A., Metropolitan State; A.M., Ph.D., Illinois
- FINN-BODNER, SUSAN T., *Associate Professor* (Radiology), 1991, 1995. B.S., Montana State; M.S., D.V.M., Colorado State; D.A.C.V.R., Auburn
- FINN, J. SCOTT, *Associate Professor* (Architecture), 1987, 1990. A.B., Princeton; M.Arch., Yale
- FISCHMAN, MARK G., *Professor* (Health & Human Performance), 1989, 1996. B.S.Ed., SUNY; M.S., Madison; Ph.D., Penn State
- FITCH-HAUSER, MARGARET E., *Associate Professor* (Communication), 1987, 1996. B.A., M.A., S.F. Austin; Ph.D., Oklahoma
- FITCH, JAMES L., *Professor* (Communication Disorders), 1990, 1993. B.S., Illinois State; M.S., Ph.D., Florida State
- FITZPATRICK, JACK, *Library Assistant VI*, Library, 1992, 1996. B.S., Auburn
- FLANDERS, KATHY L., *Ext. Specialist & Assistant Professor* (Entomology), 1995. B.S., Cornell; M.S., Ph.D., Minnesota
- FLEMING, BARRY, *Associate Professor* (Art), 1988, 1994. B.F.A., W. Kentucky; M.F.A., Tennessee
- FLEMING, JOHN P., *Instructor* (Theatre), 1996. A.B.S., Wisconsin; M.A., Ph.D., Texas
- FLEMING, LISA P., *Assistant Manager*, Food Services, 1987, 1991. B.A., Auburn
- FLEMING, RICHARD K., *Associate Professor* (Psychology), 1990, 1995. B.S., New Hampshire; M.Ed., M.S., Ph.D., Massachusetts
- FLESHMAN, SHERRIE M., *Instructor* (Foreign Language), 1994. B.A., Whitman; M.A., Ph.D., Oregon
- FLETCHER, JOHN T., *Registrar*, Registrar's Office, 1988, 1992. B.S., M.S., Tennessee
- FLICK, WARREN A., *Associate Professor* (Forestry), 1977. B.S., Ph.D., SUNY
- FLICK, WILLIAM C., *Director*, ESL Program & *Adjunct Assistant Professor* (English), 1983, 1994. B.A., Kentucky; M.A., Ph.D., S. Illinois
- FLOOD, CLIFFORD A., *Associate Professor* (Agricultural Engineering), 1971. B.A.E., Florida; M.S., Kentucky; Ph.D., Purdue
- FLOOD, SUSAN C., *Librarian II*, Library, 1992. B.A. Knox; M.S.L.S., Case Western Reserve
- FLODA, CURTIS, *Manager*, AU Bookstore, 1991, 1992.
- FLOWERS, GEORGE T., *Associate Professor* (Mechanical Engineering), 1990, 1995. B.S., Auburn; M.S., Ph.D., Georgia Tech
- FLOWERS, JIMMY D., *Director* (Adm.-Business), 1981, 1990. B.B.A., Georgia; M.B.A., Auburn
- FLOYD, JAMES G., *Associate Professor* (Animal & Dairy Science), 1988. B.S., West Point; M.S., Illinois; D.V.M., LSU
- FLYNN, JOANN, *Assistant Professor* (Communication), 1994, 1996. B.S., M.A., Auburn; Ph.D., Purdue
- FLYNN, KATHRYN M., *Assistant Professor* (Forestry), 1992. B.S., Auburn; M.S., Ph.D., LSU
- FLYNT, J. WAYNE, *Distinguished University Professor* (History), 1977, 1990. B.A., Howard; M.S., Ph.D., Florida State
- FOLKERTS, DEBBIE R., *Assistant Professor* (Botany-Microbiology), 1986, 1992. B.S., M.S., Auburn
- FOLKERTS, GEORGE W., *Professor* (Zoology-Wildlife Science), 1969, 1982. B.A., M.A., S. Illinois; Ph.D., Auburn
- FORD, DORIS E., *Associate Professor* (Political Science), 1984, 1992. B.S., M.S., Howard; M.Phil., Ph.D., Geo. Washington
- FORD, F. NELSON, *Assistant Professor* (Management), 1982. B.S., M.A., Ph.D., Alabama
- FORSYTHE, SANDRA, *Professor* (Consumer Affairs), 1991, 1995. B.S., E. Tennessee State; M.S., Virginia Tech; Ph.D., Tennessee
- FOSTER, CLIFTON D., *Librarian II & Head*, Library, 1995. B.A., South Alabama; M.A., M.L.S., Maryland
- FOSTER, EVELYN B., *Assistant to the Dean II* (Adm.-Liberal Arts), 1985, 1995.
- FOSTER, RALPH S., *Director*, Outreach Information & Marketing, 1989, 1993. B.S., Auburn; M.S., Troy State-Montgomery
- FOSTER, WINFRED A., *Professor* (Aerospace Engineering), 1974, 1996. B.A.E., M.S.E., Ph.D., Auburn
- FOWLER, SAMUEL R., *Associate Professor*, Cooperative Extension, 1982, 1993. B.S., M.A., Ph.D., Mississippi State
- FOX, LAURA S., *Associate Interior Designer*, Architect's Office, 1994. B.S., Auburn
- FRANDSEN, JOHN C., *Adjunct Associate Professor*, Reg. Parasite Res. Lab., 1982. B.S., M.S., Ph.D., Utah
- FREDERICK, JANET E., *Librarian III*, Library, 1991, 1994. B.A., Nevada; M.S., Illinois
- FREELAND, MICHAEL R., *Research Specialist*, (Forestry), 1996. B.S.F., Tennessee
- FREEMAN, BARRY L., *Associate Professor* (Entomology), 1976, 1994. B.S., M.S., Georgia
- FREEMAN, JULIA R., *Coordinator* (Textile Engineering), 1989, 1994. B.A., Auburn
- FRIEDMAN, MICHAEL E., *Professor* (Chemistry), 1968, 1982. B.S., Penn; M.S., Brooklyn Tech; Ph.D., Cornell
- FROBISH, LOWELL T., *Professor*, (Animal & Dairy Sciences), 1986, 1996. B.S., Illinois; M.S., Ph.D., Iowa State
- FROMHOLD, A.T., *Professor* (Physics), 1965. B.E.P., M.S., Auburn; Ph.D., Cornell
- FUKAI, JUNICHIRO, *Associate Professor* (Physics), 1974. B.Eng., Waseda; M.S., Denver; Ph.D., Tennessee
- FUKAI, SHIGEO, *Management Scientist*, Ctr. for Intl' Commerce, 1986, 1990. LL.M., Tokyo; M.A., Denver; Ph.D., Tennessee
- FURR, JAMES E., *Professor* (Art), 1977, 1991. B.F.A., Tennessee; M.F.A., Tulane
- GADZEV, ANTHONY T., *Associate Professor* (Political Science), 1994, 1996. B.A., Memorial; L.T., Ghana; M.A., Carleton; M.A., Ph.D., Denver
- GAGLIANO, CARL S., *Electrical Engineer*, Facilities, 1987. B.E.E., Auburn
- GAINE, AMBROSE, *Assistant Director*, Aquatics Center, 1996.
- GALE, WILLIAM F., *Assistant Professor* (Mechanical Engineering), 1992. B.Eng., Leeds; Ph.D., Cambridge
- GALLINA, CHARLES A., *Associate Sports Information Director*, Athletic Department, 1993, 1994. B.A., Auburn
- GAN, YONG-XUE, *Visiting Scholar* (Mechanical Engineering), 1995. B.Sc., Hunan; M.Sc., Ph.D., Beijing Inst.
- GANDY, REX F., *Professor* (Physics), 1984, 1994. B.S., M.S., Memphis State; Ph.D., Texas
- GARDINER, LORRAINE R., *Associate Professor* (Management), 1988, 1994. B.A., Hollins; Ph.D., Georgia

Faculty and Staff

- GARDINER, STANLEY C., *Associate Professor* (Management), 1987, 1995. B.A., Sou. Cal; M.A., Pepperdine; Ph.D., Georgia
- GARMAZ, MAGDALENA, *Associate Professor* (Architecture), 1990, 1995. M.S., Cincinnati; Dip., Zegreb
- GARNER, M. GRANT, *Coordinator*, Recreation Services, 1994, 1996. B.S., Troy State; B.S., M.B.A., Auburn
- GARRETT, MARILYN L., *Academic Advisor* (Adm.-Engineering), 1986, 1992. B.S., Missouri
- GARRISON, KAREN, *Associate Professor* (Music), 1983, 1991. B.A., North Carolina; M.M., South Carolina; Ph.D., Florida State
- GARRISON, ROGER, *Professor* (Economics), 1978, 1996. B.S., Missouri-Rolla; M.A., Missouri-KC; Ph.D. Virginia
- GARVERICK, JAMES E., *Instructor* (Accountancy), 1995. B.S., Delta State; M.S., Kent State
- GASTALDO, ROBERT A., *Professor* (Geology), 1978, 1988. B.A., Gettysburg; M.S., Ph.D., Illinois
- GAY, MARIAN J., *Specialist*, Personnel Services, 1971, 1987
- GAYLOR, MICHAEL J., *Associate Professor* (Entomology), 1978, 1984. B.S., M.S., Auburn; Ph.D., Texas A&M
- GAZAWAY, WILLIAM S., *Professor* (Plant Pathology), 1976, 1988. B.S., Mississippi State; Ph.D., Texas A&M
- GEHLING, ROBERT G., *Director*, Information Systems Support, 1982. B.S., Austin Peay; M.B.A., N. Florida
- GENTRY, MARJORIE H., *Assistant to the Dean II* (Adm.-Forestry), 1978, 1992
- GENTRY, WILLIAM R., *Instructor* (Foreign Language), 1992, 1994. B.S., William Carey; B.S., South Alabama; M.A., Auburn
- GERBER, LARRY G., *Associate Professor* (History), 1983. B.A., M.A., Ph.D., California
- GETZ, RODGER R., *Adjunct Assistant Professor*, Southeast Ag. Weather Service Ctr., 1975, 1988. B.S., M.S., Rutgers
- GIAMBRONE, JOSEPH J., *Professor* (Poultry Science), 1977, 1989. B.S., M.S., Delaware; Ph.D., Georgia
- GIBSON, MICHAEL L., *Professor* (Management), 1988, 1995. B.S., Georgetown; M.B.A., D.B.A., Kentucky
- GILBERT, SUSAN R., *Academic Advisor* (Adm.-Architecture), 1993. B.A., Georgia
- GILBERT, TAB, *Manager*, Environmental Health, 1982, 1987. B.A., Auburn
- GILCHRIST, RONALD D., *Engineer*, Nuclear Sci. Ctr., 1969
- GILES, HARRIET W., *Assistant Professor* (Human Development & Family Studies), 1983, 1985. B.S., M.S., Auburn; Ph.D., Georgia
- GILES, WILLIAM F., *Professor* (Management), 1974, 1984. B.A., Duke; M.A., Georgia; Ph.D., Tennessee
- GILL, WILLIAM R., *Adjunct Professor*, USDA Tillage Lab., 1982
- GILLIAM, CHARLES H., *Professor* (Horticulture), 1980, 1989. B.S., Tennessee; M.S., Ph.D., Virginia Tech
- GILLOCK, JAMES, *Industrial Hygienist II*, Environmental Health, 1990. B.S., Auburn
- GIMENEZ, DIEGO M., *Associate Professor* (Animal & Dairy Science), 1978, 1989. B.A., M.S., Ph.D., Florida
- GJERSTAD, DEAN H., *Professor & Director* (Forestry), 1975, 1990. B.S., M.S., Ph.D., Iowa State
- GLADDEN, L. BRUCE, *Titled Professor* (Health & Human Performance), 1989, 1996. B.S., Ph.D., Tennessee
- GLASS, KATHRYN M., *Research Assistant* (Agronomy & Soils), 1986, 1992
- GLAZE, LINDA S., *Associate Professor* (Foreign Languages & Literatures), 1979, 1995. B.A., Marietta; M.A., Ph.D., Wisconsin
- GLOVER, GLENN R., *Associate Professor* (Forestry), 1975, 1992. B.S., M.S., Auburn; Ph.D., Virginia Tech
- GLUHMANN, JOSEPH W., *Professor* (Art), 1987, 1994. A.B., Johns Hopkins; M.A., W. Reserve; Ph.D., Harvard
- GLYNN, THOMAS P., *Librarian II*, Library, 1996. B.A., Chicago; M.L.I.S., M.A., Wisconsin
- GOODARD, H. WALLACE, *Ext. Specialist & Associate Professor* (Human Development & Family Studies), 1990, 1995. B.S., M.Ed., Brigham Young; Ph.D., Utah State
- GODWIN, NORMAN H., *Assistant Professor* (Accountancy), 1996. B.S., Auburn; Ph.D., Michigan State
- GOETERS, HERMAN P., *Associate Professor* (Mathematics), 1986, 1991. B.A., S. Conn. State; M.S., Ph.D., Connecticut
- GOFF, TOMMY K., *Adjunct Associate Professor* (Music), 1996. B.S., M.S., Auburn
- GOFF, WILLIAM D., *Professor* (Horticulture), 1982, 1993. B.S., M.S., Mississippi State; Ph.D., Clemson
- GOLDEN, DENNIS L., *Assistant Professor* (Small Animal Surgery & Medicine), 1990. B.S., D.V.M., Florida
- GOLDEN, MICHAEL S., *Associate Professor* (Forestry), 1975, 1982. A.B., Trevecca; M.S., Auburn; Ph.D., Tennessee
- GOLDMAN, HELEN E., *Librarian II*, Library, 1985. B.A., M.L.S., South Carolina
- GOLDSBOROUGH, JAMES A., *Visiting Assistant Professor* (Architecture), 1996. B.I.D., Auburn
- GOLDSTEIN, HOWARD A., *Assistant Professor* (Music), 1992. B.A., California; M.M., D.M.A., Peabody
- GOLDSTEIN, R. JAMES, *Associate Professor* (English), 1991, 1995. B.A., Rochester; M.A., Ph.D., Virginia
- GOOD, RICHARD D., *Assistant Professor & Director* (Music), 1995. B.M.Ed., Mansfield; M.M., LSU
- GOODLOE, GEORGE W., *Manager* (Chemistry), 1985. B.S., Brooklyn Polytechnic; Ph.D., Penn State
- GOODMAN, JOHN R., *Superintendent*, Memorial Coliseum, 1995. B.A., Auburn
- GOODMAN, NINA O., *Coordinator*, Bursar's Office, 1986, 1993. B.S., M.S., Auburn
- GOODMAN, W. ROBERT, *Associate Professor* (Agricultural Economics & Rural Sociology), 1990, 1996. B.S., M.S., Auburn; Ph.D., Tennessee
- GOOLSBY, MARIAN J., *Specialist III*, University Computing, 1990, 1996. B.S., Auburn
- GORRELL, JOHN J., *Associate Dean* (Adm.-Education), 1989, 1992. B.A., Vanderbilt; M.A., Ph.D., Florida
- GOSSETT, CLAUDE W., *Professor* (Music), 1974, 1992. B.S., Lamar; M.C.M., S.W. Baptist Theo. Sem.; Ph.D., Southern Mississippi
- GOSSETT, SYLVIA C., *Instructor* (Music), 1978, 1993. B.S., Lamar; M.M., Auburn
- GOTHARD, JOY H., *Instructor* (Curriculum & Teaching), 1993. B.S., M.Ed., Auburn
- GOTTESMAN, ROBERT W., *Coordinator*, Planning & Analysis, 1987, 1989. B.A., M.P.A., Auburn
- GOVIL, NARENDRA K., *Professor* (Mathematics), 1983, 1986. B.Sc., Agra (India); M.Sc., Aligarh (India); Ph.D., Montreal
- GOWAYED, YASSER A., *Associate Professor* (Textile Engineering), 1992, 1996. B.Sc., M.Sc., American U.-Cairo; Ph.D., North Carolina State
- GRAHAM, JODY L., *Visiting Assistant Professor* (Philosophy), 1995. B.A., W. Ontario; M.A., Ph.D., Ohio State
- GRAHAM, LAWRENCE C., *Supervisor* (Entomology), 1985. B.S., Auburn
- GRAHAM, MARK M., *Associate Professor* (Art), 1990, 1994. B.A., M.A., Penn State; Ph.D., UCLA
- GRAMBERG, ANNE K., *Assistant Professor* (Foreign Languages & Literatures), 1992. M.A., Georg Aug; Ph.D., Michigan State
- GRANT, TARA C., *Assistant Director*, Union Building Operations, 1995. B.S., M.B.A., Auburn
- GRAVES, ANNE C., *Manager*, Food Services, 1968. B.S., Auburn
- GRAVES, JEFFERSON E., *Engineer*, Engr. Admin., 1989, 1994. B.S.E.E., Auburn
- GRAVOIS, JAMES M., *Librarian III*, Library, 1991, 1996. B.A., New Orleans; M.L.I.S., South Carolina; M.A., Texas
- GREEN, JAMES C., *Research Associate* (Agronomy & Soils), 1994. B.S., Tennessee
- GREENE, KATHERINE S., *Visiting Assistant Professor* (Psychology), 1987, 1989. B.A., Georgia; M.S., Mississippi State; Ph.D., Alabama
- GREENE, MICHAEL E., *Professor* (Electrical Engineering), 1986, 1992. B.E.E., M.S., Ohio State; Ph.D., Rice
- GREENLEAF, ROBERT B., *Professor* (Music), 1974, 1994. B.M., Florida State; M.M., D.M.A., LSU

Faculty and Staff

- GRENELL, KEENAN D., *Assistant Professor* (Political Science), 1993. B.A., Tongaloo Col.; M.P.A., Mississippi State; Ph.D., Illinois State
- GRESHAM, LINDA S., *Senior Academic Advisor*, (Adm.-Education), 1983, 1984. B.S.E., Emporia; B.F.A., Auburn
- GRESHAM, STEPHEN L., *Professor* (English), 1975, 1995. B.S.E., M.A., Katcher; Ph.D., Missouri
- GRIDER, CARROLL E., *Coordinator*, Food Services, 1990.
- GRIFFIN, JOYCE R., *Associate Registrar, Registrar's Office*, 1985, 1993. B.S., M.Ed., Troy State
- GRIGSBY, LEONARD L., *Alabama Power Dist. Professor* (Electrical Engineering), 1984. B.S.E.E., M.S.E.E., Texas Tech; Ph.D., Oklahoma State
- GRIMMETT, LARRY N., *Industrial Hygienist II*, Environmental Health, 1984, 1990.
- GRISOM-ROSSEAU, REBECCA, *Lead Specialist*, University Computing, 1991, 1995. B.S., M.B.A., North Alabama
- GRIZZLE, JOHN M., *Professor* (Fisheries & Allied Aquacultures), 1976, 1988. B.S., M.S., Oklahoma State; Ph.D., Auburn
- GROBECKER, BETSEY A., *Assistant Professor* (Curriculum & Teaching), 1995. B.S., SUNY-Buffalo; M.A., Montclair State; Ed.D., Ogdens
- GROPPER, DANIEL M., *Associate Professor & Director* (Economics), 1988, 1995. B.A., Maryland; M.S., Ph.D., Florida State
- GROPPER, SAREEN, *Associate Professor & Head* (Nutrition & Food Science), 1988, 1994. B.S., Maryland; M.S., Ph.D., Florida State
- GROSS, CHARLES, *Square D Professor* (Electrical Engineering), 1972, 1985. B.S., B.S.E.E., Alabama; M.S., Ph.D., Missouri
- GROSS, ROBERT S., *Assistant Professor* (Aerospace Engineering), 1988. B.S., Virginia Tech; M.S., Ph.D., Clemson
- GROVER, JANICE E., *Director* (Human Development & Family Studies), 1985, 1994. B.S., M.S., Iowa State
- GROVER, JOHN H., *Professor* (Fisheries & Allied Aquacultures), 1971, 1984. B.S., Utah; M.S., Ph.D., Iowa State
- GRUENHAGE, GARY F., *Professor* (Mathematics), 1974, 1982. B.S., Nebraska; M.A., Ph.D., California
- GRYSKI, GERARD S., *Professor* (Political Science), 1982, 1995. B.B.A., City Col.-New York; Ph.D., Massachusetts
- GUERNEY, JULIA C., *Instructor* (English), 1996. B.A., Millsaps; M.F.A., Ph.D., Arkansas
- GUERTAL, ELIZABETH A., *Assistant Professor* (Agronomy & Soils), 1993. B.S., M.S., Ohio State; Ph.D., Oklahoma State
- GUFFEY, HUGH, *Associate Professor* (Marketing & Transportation), 1973, 1995. B.B.A., M.B.A., Ph.D., Georgia
- GUIN, JAMES A., *Professor* (Chemical Engineering), 1970, 1981. B.S., M.S., Alabama; Ph.D., Texas
- GUIN, LETICIA J., *Instructor* (Foreign Language), 1987.
- GULLEDGE, REBA J., *Sports Information Assistant*, Athletic Dept., 1974, 1987.
- GUNDLACH, JAMES H., *Associate Professor* (Sociology), 1974, 1982. B.A., Oklahoma State; M.A., Ph.D., Texas
- GUPTA, RAM B., *Assistant Professor* (Chemical Engineering), 1995. B.E., Roorkee; M.S., Calgary; Ph.D., Texas
- GUTHRIE, RICHARD L., *Associate Dean, Assistant Director & Professor* (Adm.-Agriculture), 1983, 1992. B.S., M.S., Auburn; Ph.D., Cornell
- GÜVEN, OKTAY, *Professor* (Civil Engineering), 1981, 1996. B.S., Robert; M.S., Ph.D., Iowa
- GUVEN, SADEL, *Research Specialist* (Animal & Dairy Science), 1984, 1990. B.S., Robert
- GUYER, CRAIG, *Associate Professor* (Zoology-Wildlife Science), 1987, 1992. B.S., Humboldt State; M.S., Indiana State; Ph.D., Miami
- GWIN, WILLIAM R., *Professor* (Architecture), 1973, 1984. B.Arch., Auburn; M.Arch., Pennsylvania; M.V.A., Ga. State
- GYNTHER, MALCOLM D., *Professor* (Psychology), 1974. B.A., M.A., Stanford; Ph.D., Duke
- GYNTHER, RUTH A., *Instructor* (Psychology), 1982. A.B., Montevideo; M.A., North Carolina
- HAAG, NANCY J., *Associate Professor* (Communication Disorders), 1989, 1996. B.A., Auburn; M.S., Purdue; Ph.D., Florida
- HACKETT, DEBRA A., *Instructor* (Nursing), 1993. B.S., Florida Atlantic; B.S.N., Florida State; M.S.N., UNCG
- HACKETT, EARLE R., *Assistant Professor* (Educational Foundations, Leadership & Technology), 1993. B.A., M.A., Florida Atlantic; Ph.D., Florida State
- HAGAN, AUSTIN K., *Professor* (Plant Pathology), 1980, 1992. B.S., Indiana-Pennsylvania; M.S., Ph.D., Ohio State
- HAGGERTY, JOE K., *Engineer* (Electrical Engineering), 1984. B.S.E.E., Auburn
- HAGERTY, JOHN R., *Instructor* (English), 1995. A.B., M.A., John Carroll; Ph.D., Iowa
- HAGUE, DAYDRIE A., *Instructor* (Theatre), 1995. M.F.A., Washington
- HAINDS, MARK J., *Research Associate* (Forestry), 1995. B.S., Missouri; M.S., Auburn
- HAIRSTON, JAMES E., *Professor* (Agronomy & Soils), 1989. B.A., Berry; Ph.D., Georgia
- HALBROOKS, JOHN F., *Extension Program Associate* (Chemistry), 1994. B.S., M.S., Auburn
- HALE, DARYL A., *Assistant Director*, Admissions, 1993. B.S., M.Ed., Tuskegee
- HALL, AMY S., *Medical Technologist* (Pathobiology), 1988, 1991. B.S., Troy State
- HALL, GEORGE W., *Research Superintendent* (Poultry Science), 1982, 1993. B.S., Auburn
- HALL, HINES H., *Associate Professor* (History), 1967, 1982. B.A., Duke; M.A., Auburn; Ph.D., Vanderbilt
- HALL, KAREN, *Assistant Director*, Foy Union Building Operations, 1992. B.A., M.S.C., Auburn
- HALL, MARTHA T., *Assistant Director*, Student Financial Aid, 1971, 1990. B.S., M.Ed., Auburn
- HALL, VONDALYN J., *Instructor* (Consumer Affairs), 1992. B.S., N. Alabama; M.S., Auburn
- HALPIN, GERALD, *Professor* (Educational Foundations, Leadership & Technology), 1974, 1982. B.S., Jacksonville State; M.Ed., Ed.D., Georgia
- HALPIN, GLENELLE, *Professor* (Educational Foundations, Leadership & Technology), 1974, 1990. B.S., Jacksonville State; M.A., Ph.D., Georgia
- HALVERSON, MELVIN B., *Visiting Assistant Professor* (Vocational & Adult Education), 1995. B.S., M.S., N. Illinois; Ph.D., Florida State
- HAMES, WILLIS E., *Assistant Professor* (Geology), 1994. B.S., M.S., Georgia; Ph.D., Virginia Tech
- HAMILTON, MARY M., *Instructor* (Music), 1996.
- HAMMERSMITH, JAMES P., *Associate Professor* (English), 1978, 1984. B.A., Ph.D., Wisconsin
- HAMMETT, DILLARD J., *Assistant Bursar*, Bursar's Office, 1982. B.S., Auburn
- HAMMOND, LYNNE B., *Assistant to the President and Secretary to the Board of Trustees*, 1991, 1997. B.S., Auburn
- HAMNER, JENNIFER B., *Associate Professor* (Nursing), 1990, 1996. B.S., Jacksonville State; M.S., Alabama-Birmingham
- HAMRICK, MAYNARD E., *Professor* (Pharmaceutical Science), 1971. B.S., M.S., Ph.D., Auburn
- HAN, YONGSHENG, *Associate Professor* (Mathematics), 1992. B.A., M.A., Peking; Ph.D., Washington (St. Louis)
- HANBY, R. KENT, *Student Services Director* (Forestry), 1996. B.S., Auburn; M.F., Yale
- HANCOCK, GREGORY, *Assistant Professor* (Educational Foundations, Leadership & Tech.), 1991. B.S., M.Ed., Ph.D., Washington
- HAND, JOHN H., *Professor* (Finance), 1974, 1982. B.A., Swarthmore; Ph.D., MIT
- HANEY, DAVID P., *Associate Professor* (English), 1989, 1993. B.A., Macalester; M.A., Ph.D., SUNY
- HANKERSON, DARREL R., *Associate Professor* (Discrete & Statistical Sciences), 1987, 1992. B.S., M.S., Mankato State; M.A., Ph.D., Nebraska
- HANKES, GERALD H., *Professor* (Small Animal Surgery & Medicine), 1969. B.S., D.V.M., Illinois; M.S., Ph.D., Colorado State

Faculty and Staff

- HANKINS, SUSAN E. *Instructor* (Industrial Engineering), 1995. B.A., St. Olaf; M.S., Michigan
- HANNAFIN, ROBERT, *Assistant Professor* (Educational Foundations, Leadership & Technology), 1994. B.S., St. Francis; M.B.A., Fordham; Ph.D., Arizona State
- HANSEN, JAMES R., *Professor & Chair* (History), 1986, 1995. A.B., Indiana Univ.; M.A., Ph.D., Ohio State
- HANSON, DOUGLAS I., *Assistant Director*, Asphalt Tech. Ctr., 1992. B.S., South Dakota School of Mines; M.S., New Mexico
- HANSON, JAMES D., *Associate Professor* (Physics), 1984, 1989. B.A., Kalamazoo; M.S., Cornell; Ph.D., Maryland
- HANSON, MICHELLE A., *Assistant Director*, Student Financial Aid, 1994, 1996. B.S., M.Ed., Auburn
- HANSON, RUSSELL R., *Assistant Professor* (Large Animal Surgery & Medicine), 1992. B.S., D.V.M., Georgia
- HANSON, TERRILL R., *Senior Research Associate* (Agricultural Economics & Rural Sociology), 1989. B.S., Allegheny; M.Ag., M.A., Auburn
- HARDIN, JAMES G., *Assistant Director*, Adm.-VP for Student Affairs, 1994. B.A., M.A., West Virginia
- HARDY, WILLIAM E., *Professor* (Agricultural Economics & Rural Sociology), 1972, 1994. B.S., M.S., Ph.D., Virginia Tech
- HARGIS, JAMES H., *Professor & Head* (Chemistry), 1970, 1988. E. New Mexico; Ph.D., Utah
- HARKER, KARL S., *Adjunct Instructor*, Ag. Weather Svc. Ctr., 1984. B.A., Indiana Central; M.S., Purdue
- HARLIN, BRENDA J., *Library Assistant VI*, Library, 1969, 1985. B.S., Auburn
- HARMON, KATHRYN S., *Assistant Director*, Adm.-Bookstore, 1987, 1994. B.A., B.S., Auburn
- HARPER, DEBRA G., *Lead Specialist*, Financial Information Systems, 1979, 1988
- HARPER, ELIZABETH B., *Development Officer I*, Alumni Administration, 1996. B.A., Washington Col.
- HARRELL, DAVID E., *Eminent Scholar* (History), 1990. B.A., David Lipscomb; M.A., Ph.D., Vanderbilt
- HARRIS, GREG A., *Associate Professor* (Discrete & Statistical Sciences), 1987, 1992. B.A., California-Fullerton; M.S., Montana State; Ph.D., Utah
- HARRIS, JAMES R., *Associate Professor* (Marketing & Transportation), 1988. B.B.A., Emory; M.B.A., Ph.D., Florida
- HARRIS, MICHAEL W., *Manager*, Facilities, 1989, 1990. B.S., Auburn
- HARRIS, PHYLLIS B., *Assistant to the Dean II* (Adm.-Human Sciences), 1977, 1993. B.S., Faulkner
- HARRIS, STANLEY G., *Associate Professor* (Management), 1986, 1994. B.S., N. Georgia; B.A., Ph.D., Michigan
- HARRISON, CAROL E., *Assistant Professor* (History), 1993. B.A., LSU
- HARRISON, CYNTHIA L., *Instructor* (Zoology-Wildlife Science), 1994. B.S., Baylor; M.A., Auburn
- HARRISON, KEVIN M., *Accountant I*, Contracts & Grants Accounting, 1996. B.S., Troy State
- HARRISON, LEE ANN, *Clinical Instructor* (Nursing), 1994. B.S.N., Auburn
- HARSHBARGER, FREDERICK F., *Assistant to the Dean II* (Adm.-Vet Med), 1982, 1983. B.S., Auburn
- HARTELL, MARK G., *Research Associate*, Institute for Biological Detection Systems, 1994. B.S., SUNY; M.S., Ohio State
- HARTFIELD, ROY J., *Associate Professor* (Aerospace Engineering), 1990, 1996. B.S., S. Mississippi; M.S., Ph.D., Virginia
- HARTMAN, MICHAEL, *Instructor* (English), 1995. B.A., Oklahoma Baptist; M.A., Oklahoma State; Ph.D., Auburn
- HARTSFIELD, NANCY M., *Professor* (Art), 1982, 1989. B.V.D., M.F.A., Auburn
- HARTZOG, DALLAS L., *Professor* (Agronomy & Soils), 1969, 1988. B.S., M.S., Auburn
- HARTZOG, WILEY G., *Vocational Training Manager*, Facilities, 1971, 1994. B.S., North Carolina State; M.A., Appalachian State; Ed.D., Auburn
- HARZEM, PETER, *Hudson Professor* (Psychology), 1978, 1988. B.Sc., (Hon.), London; Ph.D., Wales
- HASTIE, PETER A., *Assistant Professor* (Health & Human Performance), 1993. B.H.M.S., B.H.M.S., Ph.D., Queensland
- HATCH, L. UPTON, *Professor* (Agricultural Economics & Rural Sociology), 1982, 1996. B.A., Dartmouth; M.S., Ph.D., Georgia; Ph.D., Minnesota
- HATHCOCK, JOHN T., *Associate Professor* (Radiology), 1984, 1994. D.V.M., M.S., Auburn
- HATHCOCK, TERRI L., *Instructor* (Pathobiology), 1985, 1990. B.S., M.S., Auburn
- HAUGE, JAMES B., *Instructor* (Zoology-Wildlife Science), 1987, 1995. B.S., M.S., S. Dakota State
- HAYENS, CAROLYN C., *Librarian III*, Library, 1982, 1991. B.A., W. Florida; M.S.L.S., Kentucky
- HAWKINS, JAMES H., *Network Support Specialist III*, University Computing, 1993
- HAYES, VIRGINIA, *Associate Dean* (Adm.-Education), 1971, 1984. B.S., Samford; M.A., Ed.D., Alabama
- HAYGOOD, SUE, *Instructor* (Accountancy), 1982. B.S., Alabama; M.B.A., Auburn
- HAYHURST, CAROLYN A., *Director*, Budget Control, 1977, 1987. A.B., W. Virginia; B.S., Auburn
- HAYN, JUDITH A., *Assistant Professor* (Curriculum & Teaching), 1996. B.A., Pittsburg State; M.S., Ph.D., Kansas
- HAYNES, MAUREEN D., *Director* (Rehabilitation & Special Education), 1977, 1991. B.A., M.A., N. Michigan
- HAYNES, WILLIAM O., *Professor* (Communication Disorders), 1976, 1996. B.A., M.A., N. Michigan; Ph.D., Bowling Green
- HEARD, FRED, *Supervisor*, Facilities, 1963, 1985
- HEARD, JOHN W., *Research Associate* (Physics), 1997
- HEATH, JO W., *Professor* (Mathematics), 1969. B.S., S.W. Louisiana; M.S., Ph.D., Auburn
- HEBERT, ROBERT F., *Russell Professor* (Economics), 1974, 1993. B.S., M.S., Ph.D., LSU
- HECK, DONALD R., *Associate Professor* (Art), 1986, 1991. B.F.A., M.F.A., E. Tennessee State
- HEGDE, VISHNUMURTHY R., *Research Associate* (Chemistry), 1996. B.Sc., Baliga; M.Sc., Mangalore
- HEILMAN, JOHN G., *Associate Dean* (Adm.-Liberal Arts) & *Professor* (Political Science), 1973, 1992. B.A., Lafayette; M.A., Ph.D., New York
- HEILMAN, URSULA M., *Instructor* (Foreign Language), 1996. A.B., Hamburg; M.Ed., Auburn
- HEIM, AMY J., *Art Designer II*, Alumni Administration, 1994. B.F.A., Auburn
- HEIN, MICHAEL F., *Associate Professor* (Building Science), 1987, 1992. B.S., Tulane; M.S., Princeton
- HEINS, MEREDITH L., *Sports Information Specialist*, Athletic Department, 1994. B.S., M.S., Florida State
- HELMS, BARBARA B., *Lead Specialist*, Univ. Computing Services, 1988, 1995. B.S., Auburn
- HELMS, JOHN M., *Manager*, Telecomm. & ETV, 1989. B.S., Auburn
- HEMSTREET, WILLIAM, *Senior Research Associate* (Fisheries & Allied Aquacultures), 1985, 1989. B.S., Valdosta State; M.S., Auburn
- HENDERSON, FRANK D., *Network Engineer*, University Computing, 1992, 1996. B.E.E., Auburn
- HENDERSON, JOHNNY L., *Professor* (Discrete & Statistical Sciences), 1984, 1990. B.S., M.S., Arkansas; Ph.D., Nebraska
- HENDERSON, RALPH A., *Professor* (Small Animal Surgery & Medicine), 1972, 1986. D.V.M., Missouri; M.S., Auburn
- HENDERSON, STEPHEN F., *Director* (Adm.-Engineering), 1983, 1994. B.S., Auburn
- HENDRICK, JAMES T., *Exec. Director-Airport*, AU Aviation, 1975, 1987. B.S., M.S., Troy State
- HENDRICKS, MARGARET, *Manager*, AU Bookstore, 1991, 1992. B.A., Auburn
- HENDRIX, CHARLES M., *Associate Professor* (Pathobiology), 1981, 1988. B.S., Clemson; D.V.M., Georgia; M.S., Ph.D., Minnesota
- HENDRIX, JAMES A., *Associate Editor* (Adm.-Veterinary Medicine), 1987, 1995. B.A., North Alabama
- HENDRIX, MARY ELLEN, *Associate Editor*, Alumni & Development, 1987, 1993. B.A., Auburn

Faculty and Staff

- HENDRIX, THERON D., *Assistant Professor* (Computer Science & Engineering), 1996. B.S., Jacksonville State; M.S., Georgia Tech
- HENKELS, ROBERT M., *Professor* (Foreign Languages & Literatures), 1979, 1982. B.A., Princeton; M.A., Ph.D., Brown
- HENKELS, WICKHAM, *Assistant Editor* (History), 1985, 1990. B.A., Elmira
- HENKEN, V. ELLEN, *Instructor* (Health & Human Performance), 1996. B.S., Troy State; M.S., Tennessee
- HENNESSEE, SONDRAS S., *Program Developer II*, Outreach Program Office, 1995, 1996. B.A., Clemson
- HENRY, RAYMOND P., *Professor* (Zoology-Wildlife Science), 1983, 1993. B.S., M.A., William & Mary; Ph.D., Texas
- HENSON, HARLAN N., *Associate Director*, Int'l Programs, 1992. B.A., M.A., Ph.D., Illinois
- HENTON, JUNE M., *Dean of Human Sciences, and Associate Director, Agricultural Experiment Station*, 1985, 1997. B.S., Oklahoma State; M.S., Nebraska; Ph.D., Minnesota
- HEPP, GARY R., *Associate Professor* (Zoology-Wildlife Science), 1988, 1993. B.S., Ohio State; M.S., Clemson; Ph.D., North Carolina State
- HERRING, RONALD L., *Director*, Payroll & Employee Benefits, 1973. B.S., Troy State
- HESS, JOSEPH B., *Assistant Professor* (Poultry Science), 1992. B.S., Penn State; M.S., Ph.D., Georgia
- HESSELEIN, CHARLES P., *Specialist* (Horticulture), 1994. B.S., California Poly State; M.S., California
- HETZER, GEORG, *Professor* (Mathematics), 1986, 1987. B.S., M.S., D.Sc., Technical Univ.-Aachen (W. Germany)
- HICKOK, KAREN R., *Instructor* (Music), 1996. B.M., Kentucky
- HIGGINBOTHAM, BETTY M., *Instructor* (Consumer Affairs), 1992. B.S., Auburn; B.A., M.A., M.Ed., Northwestern State
- HIGHFILL, CLAUDIA T., *Lab Supervisor* (Botany-Microbiology), 1985, 1996. A.B., M.S., Emporia State
- HIGHFILL, WILLIAM C., *Librarian IV*, Library, 1973, 1995. A.B., Oklahoma Baptist; M.S., Kansas State; Ph.D., Illinois
- HILDEBRANDT, ROGER A., *Research Associate*, Center for Governmental Services, 1994. B.A., Ohio; M.B.A., Rennselaer; M.Ed., Auburn
- HILL, DAVID T., *Professor* (Agricultural Engineering), 1979, 1986. B.S., M.S., Georgia; Ph.D., Clemson
- HILL, GEOFFREY, *Assistant Professor* (Zoology-Wildlife Science), 1993. B.S., Indiana; M.S., New Mexico; Ph.D., Michigan
- HILL, JOSEPH W., *Manager*, Food Services, 1982, 1993.
- HILL, MICHAEL W., *Manager*, Personnel Services, 1974, 1991. B.A., M.Ed., Auburn
- HILL, PAUL D., *Professor* (Mathematics), 1976. B.S., M.S., Ph.D., Auburn
- HILL, PAULETTE P., *Assistant Professor* (Nutrition & Food Science), 1988. B.A., Akron; M.Ed., Penn State; Ph.D., Virginia Tech
- HILL, TYLER R., *Research Specialist* (Forestry), 1994. B.S., Auburn-Montgomery
- HILL, WILLIAM E., *Professor* (Chemistry), 1970, 1989. B.S., M.S., Florida State; Ph.D., Strathclyde
- HILLIARD, GREGG S., *Assistant Professor* (Naval Science), 1993. B.S., Marquette
- HILTBRAND, RAY, *Network Engineer* (Adm.-Engineering), 1994.
- HILYER, THOMAS E., *Instructor* (Foreign Languages & Literatures), 1995, 1996. B.S., Mobile; M.R.E., New Orleans Baptist; M.H.S., Auburn
- HIMELRICK, DAVID G., *Professor* (Horticulture), 1989, 1994. B.S., Plymouth State; M.S., New Hampshire; Ph.D., W. Virginia
- HINATA, SATOSHI, *Professor* (Physics), 1980, 1989. B.E., Tokyo; M.S., Ph.D., Illinois
- HINDS, SUSAN L., *Supervisor*, Library, 1978, 1986. B.S., Auburn
- HINES, CHARLES C., *Auditor*, Internal Auditing, 1994, 1995. B.S., Auburn
- HINQJOSA, ADELITA, *Instructor* (Foreign Languages & Literatures), 1995, 1996. F.L.T., Auburn
- HINRICHSEN, JOHN W., *Associate Professor* (Mathematics), 1967. B.A., M.A., Ph.D., Texas
- HINTON, ARTHUR, *Assistant Professor* (Botany-Microbiology), 1992. B.S., Alabama; M.S., Kentucky; Ph.D., LSU
- HITCHCOCK, WALTER B., *Professor* (English), 1971, 1996. B.A., Auburn; M.A., Oregon; Ph.D., Duke
- HIX, LEELEEN G., *Manager*, Academic Computing Services, 1985, 1990. B.S., M.S., Auburn
- HODEL, A. SCOTTEWARD, *Associate Professor* (Electrical Engineering), 1989, 1995. B.S.C.E., M.S.E.E., Ph.D.E.E., Illinois
- HODGE, CURTIS, *Supervisor*, Facilities, 1977, 1985.
- HOERR, FREDERIC J., *Associate Professor* (Pathobiology), 1987. D.V.M., M.S., Ph.D., Purdue
- HOFFMAN, CINDY W., *Instructor* (Consumer Affairs), 1995. B.A., Delta State; B.S., Auburn
- HOFFMAN, DEAN G., *Professor* (Discrete & Statistical Sciences), 1977, 1987. B.A., Union; Ph.D., Waterloo
- HOGAN, JAN S., *Instructor* (Curriculum & Teaching), 1996. B.S., Samford; M.Ed., Troy-Montgomery
- HOLBROOK, BILLY H., *Supervisor* (Aerospace Engineering), 1975, 1982.
- HOLLAND, EILEEN G., *Assistant Professor* (Clinical Pharmacy), 1991. B.S., Pharm.D., Purdue
- HOLLEY, WILLIAM H., *Distinguished University Professor* (Management), 1969, 1995. B.S., M.B.A., Mississippi State; Ph.D., Alabama
- HOLLIFIELD, JAMES F., *Associate Professor* (Political Science), 1993, 1995. B.A., Wake Forest; M.A., Ph.D., Duke
- HOLLOWAY, BOBBY E., *Dean*, Library, 1980, 1995. B.A., Harding; M.L.S., Kentucky
- HOLMAN, LELAND, *Instructor* (Political Science), 1996.
- HOLMES, JOHN P., *Professor* (Mathematics), 1972, 1983. B.S., Georgia Tech; M.A., Georgia; Ph.D., Emory
- HOLMES, RANDALL R., *Associate Professor* (Mathematics), 1989, 1994. B.S., M.A., Missouri; Ph.D., Illinois
- HOLMES, SUSAN P., *Instructor* (Nursing), 1996. B.S.N., Auburn; M.S.N., Alabama-Birmingham
- HONNELL, ANGELINE H., *Assistant Editor* (Industrial Engineering), 1971, 1987. B.S., B.A., M.Ed., Auburn
- HOOD, JOSEPH T., *Professor* (Agronomy & Soils), 1986. B.S., Georgia; M.S., Purdue; Ph.D., Cornell
- HOOL, JAMES N., *Professor* (Industrial Engineering), 1965. B.S., M.S., Ph.D., Purdue
- HOPKINS, BILL L., *Professor* (Psychology), 1988, 1994. B.A., Emory; Ph.D., Indiana
- HORTON, JAMES O., *Research Specialist* (Agronomy & Soils), 1989, 1993. B.S., B.S., Auburn
- HORTON, ROBERT JR., *Assistant Professor* (Military Science), 1993. B.S., Troy State
- HOSKING, WILLIAM, *Professor* (Fisheries & Allied Aquacultures), 1977. B.S., M.S., Ph.D., Georgia
- HOUSEL, DAVID E., *Director of Intercollegiate Athletics*, Athletic Dept., 1970, 1994. B.A., Auburn
- HOUSTON, DEAN, *Instructor* (Political Science), 1992. B.A., N. Park Coll.; M.P.A., AUM; M.S., Troy State
- HOWARD, JAMES M., *Assistant Manager*, Food Services, 1992, 1993.
- HOWARD, MARY J., *Associate Professor* (Music), 1969. B.M., Westminster; M.M., Florida State
- HOWE, JEFFREY C., *Senior Research Associate* (Fisheries & Allied Aquacultures), 1993. B.S., George Mason; M.S., North Carolina-Wilmington
- HOWZE, GLENN R., *Professor* (Agricultural Economics & Rural Sociology), 1985, 1989. B.A., M.A., N. Texas; B.D., SMU; Ph.D., Washington State
- HSIEH, YUN-HWA P., *Assistant Professor* (Nutrition & Food Science), 1993. B.S., Catholic Fu-Jen; M.S., Purdue; Ph.D., Florida State
- HUBBARD, ANN E., *Instructor* (Art), 1995. B.F.A., Rochester Inst.; M.F.A., Arizona State

Faculty and Staff

- HUBBARD, SUSAN S., *Assistant Professor* (Nutrition & Food Science), 1993. B.S., M.S., Ed.D., Auburn
- HUDMON, BILLIE S., *Manager, Payroll & Employee Benefits*, 1995
- HUDSON, CARL D., *Associate Professor* (Finance), 1988. B.S., Tennessee; M.S., Georgia Tech; Ph.D., Arizona State
- HUDSON, DON M., *Senior Systems Programmer*, Univ. Computing, 1973. 1991. B.S., Auburn
- HUDSON, JUDITH A., *Associate Professor* (Radiology), 1983. 1996. D.V.M., Ontario Vet.; Ph.D., Auburn
- HUDSON, ROBERT G., *Instructor* (Philosophy), 1996. B.A., M.A., Ph.D., Western
- HUDSON, WILLIAM N., *Professor* (Discrete & Statistical Sciences), 1978. A.B., M.A., California; Ph.D., California-Irvine
- HUGGINS, CHRIS C., *Senior Academic Advisor* (Adm.-Business), 1986, 1994. B.A., S. Alabama
- HUGGINS, SYLVIA Y., *Assistant Director, Treasury Services*, 1988, 1992. B.B.A., Columbus
- HUGHES, DOUGLAS, *Network Engineer*, (Adm.-Engineering), 1994. B.E., Penn State
- HUGHES, JOYE O., *Advisor, Graduate Outreach Program*, 1993, 1995. B.A., Auburn
- HUGULEY, WENDI D., *Assistant Director, VP for Student Affairs*, 1994. B.S.N., Georgia College; M.Ed., Auburn
- HULSEY, CHERYL W., *Program Developer II, Outreach Programs*, 1991, 1993. B.S., Auburn
- HUMBURG, JAY M., *Associate Professor* (Large Animal Surgery & Medicine), 1973. B.S., D.V.M., Kansas State; M.S., Auburn
- HUNER, ALICIA D., *Development Coordinator I, Alumni Administration*, 1995, 1996. B.S., Miami
- HUNER, MICHAEL H., *Civil Engineer I, Asphalt Technology Ctr.*, 1995, 1997. B.C.E., Auburn
- HUNG, JOHN Y., *Associate Professor* (Electrical Engineering), 1989, 1994. B.S.E.E., Tennessee; M.S.E.E., Princeton; Ph.D., Illinois
- HUNT, SARAH L., *Research Specialist* (Animal & Dairy Sciences), 1985, 1992. B.S., South Carolina State
- HYCHE, LACY L., *Associate Professor* (Entomology), 1952. B.S., M.S., Auburn
- ICENOGLE, CAROL D., *Supervisor, Library*, 1978, 1987. B.S., W. Illinois
- ICENOGLE, DAVID W., *Assistant Professor* (Geography), 1968. B.S., W. Illinois; M.A., Illinois; Ph.D., LSU
- IHLE, DAVID M., *Adjunct Instructor, Ag. Weather Service Center*, 1980. B.S., Oklahoma State; M.S., Naval Postgraduate
- ILLIES, ANDREAS J., *Associate Professor* (Chemistry), 1984, 1990. B.A., New Hampshire; M.S., Rochester Inst.; Ph.D., Nebraska
- IRVIN, MELISSA V., *Associate Director, Union Building Operations*, 1981, 1993. B.S., M.Ed., Auburn
- IRWIN, J. DAVID, *Eminent Scholar, Professor & Head* (Electrical Engineering), 1969, 1993. B.E.E., Auburn; M.S., Ph.D., Tennessee
- ISAACS-SMITH, TAMARA F., *Senior Research Associate, Space Power Institute*, 1994. B.A., Bryn Mawr; M.S., Maryland
- JABLECKI-KRIEL, THERESA L., *Manager, Environmental Health*, 1985, 1988. B.S., Auburn
- JACKSON, CHARLES T., *Director, Athletic Dept.*, 1990, 1993. B.S., Millsaps; M.Ed. Auburn
- JACKSON, JIMMY W., *Supervising Producer, University Relations*, 1990. B.A., Auburn-Montgomery
- JACKSON, JOHN D., *Professor* (Economics), 1984, 1990. Ph.D., Claremont
- JACKSON, KATIE L., *Assistant Professor* (Nursing), 1994. B.S., Tuskegee; M.S., Alabama-Birmingham
- JACOB, MARY A., *Administrator, Space Power Institute*, 1981, 1991
- JACOBS, ANGELA S., *Lead Specialist, Academic Computing Services*, 1990. B.A., Valdosta State
- JACOBS, JOHN O., *Associate Athletic Director, Athletic Dept.*, 1988, 1994. B.S., M.B.A., Auburn
- JACOBSON, MARCIA A., *Hargis Professor* (English), 1978, 1984. B.A., M.A., Ph.D., California
- JAEGER, RICHARD C., *Distinguished University Professor* (Electrical Engineering), 1979, 1990. B.S., M.E., Ph.D., Florida
- JAFFE, ROBIN, *Assistant Professor* (Theatre), 1992. B.A., Thomas Edison State; M.F.A., Memphis State
- JAHERA, JOHN S., *Professor & Head* (Finance), 1980, 1992. B.S., M.B.A., Ph.D., Georgia
- JAKEMAN, ROBERT J., *Assistant Professor* (History), 1992. B.A., S. Florida; M.A., Valdosta State; Ph.D., Auburn
- JAMES, SIDNEY N., *Assistant Professor* (Electrical Engineering), 1966. B.S., M.S., Ph.D., Alabama
- JANER, ANN L., *Associate Professor* (Clinical Pharmacy), 1975, 1996. B.S., Phila. Pharm. & Sci.; M.S., Temple
- JANG, BOR ZENG B., *Alumni Professor* (Mechanical Engineering), 1982, 1992. B.S., Nat'l Cent.-Taiwan; M.S., Ph.D., MIT
- JANICKI, JOSEPH S., *Associate Dean* (Adm.-Vet Med), 1995. B.S., Delaware; M.S., Catholic; Ph.D., Alabama-Birmingham
- JARVIS, JENNIFER, *Coordinator, Recreation Services*, 1981, 1996. B.S., Auburn; M.Ed., Troy State
- JAY, DIANNE K., *Supervisor, Facilities Division*, 1979, 1996
- JAY, WILLIAM H., *Construction Director, Facilities*, 1976, 1994. B.S., Auburn
- JELKE, THEODORE J., *Manager, Adm. Computing Svc.*, 1983. B.S., Purdue; M.B.A., South Dakota
- JENDA, CLAUDINE A., *Librarian III & Head, Library*, 1989, 1995. B.Sc., Malawi; M.Sc., City U
- JENDA, OVERTOWN, *Associate Professor* (Discrete & Statistical Sciences), 1988, 1992. B.Sc., Malawi; M.A., Ph.D., Kentucky
- JENKINS, MEREDITH H., *Sports Info Specialist, Athletic Department*, 1994. B.S., M.S., Florida State
- JENKINS, RHONALD M., *Associate Professor* (Aerospace Engineering), 1985, 1994. B.S., M.S., Florida State; Ph.D., Purdue
- JENSEN, JOHN W., *Professor & Head* (Fisheries & Allied Aquacultures), 1979, 1995. B.S., Minnesota; M.S., Ph.D., Auburn
- JENSEN, R.H. MARLIN, *Associate Professor* (Finance), 1988, 1994. B.A., Jamestown; M.B.A., Minnesota; Ph.D., Texas A&M
- JERNIGAN, MICHAEL G., *Editor, Alumni & Development*, 1985, 1987. B.A., M.A., Auburn
- JERNIGAN, VICKIE L., *Lead Specialist, Financial Information Systems*, 1979, 1984
- JIRIK, SALLY A., *Slide Curator, Library*, 1994. B.S., Cameron
- JOHNSON, ARMANDA M., *Staff Physician, Student Health Center*, 1993. B.A., M.D., Texas
- JOHNSON, BILLIE D., *Chief Flight Instructor, AU Aviation*, 1988, 1990. B.S., US Naval Postgrad.; M.B.A., AUM
- JOHNSON, CALVIN R., *Associate Director, Micro. Materials Manuf.*, 1988, 1996. B.S., West Point; M.S.E., Arizona State
- JOHNSON, CAROLE, *Assistant Professor* (Communication Disorders), 1992. B.A., California-Santa Barbara; M.A., Ph.D., Tennessee
- JOHNSON, CLARENCE E., *Professor* (Agricultural Engineering), 1979. B.S., Oklahoma State; M.S., Ph.D., Iowa State
- JOHNSON, DAVID O., *Instructor* (Theatre), 1995. B.A., M.F.A., Utah; Ph.D., Texas
- JOHNSON, EDNA B., *Associate Professor* (Journalism), 1986, 1993. B.A., Auburn; M.A., Alabama
- JOHNSON, EMMETT F., *Assistant Professor* (Aerospace Engineering), 1988. B.E.E., Auburn; M.S.E.E., Alabama
- JOHNSON, J. LAVAUGHN, *Professor & Head* (Agricultural Economics & Rural Sociology), 1978, 1989. B.S., M.S., Auburn; Ph.D., Kentucky
- JOHNSON, LISA S., *Librarian II, Library*, 1993. B.S., Montana State; M.L.S., Rutgers
- JOHNSON, MARK E., *Manager* (Physics), 1982. B.S., Athens State
- JOHNSON, PATRICIA M., *Instructor* (Foreign Language), 1994, 1996. M.D., Mexico
- JOHNSON, PAUL M., *Associate Professor* (Political Science), 1991, 1992. B.A., Rice; M.A., Ph.D., Stanford
- JOHNSON, PETER D., *Professor* (Discrete & Statistical Sciences), 1980, 1988. B.Sc., Brown; Ph.D., Michigan
- JOHNSON, ROBERT W., *Professor* (Electrical Engineering), 1987, 1995. B.E.E., M.S.E.E., Vanderbilt; Ph.D., Auburn
- JOHNSTON, JAMES M., *Alumni Professor* (Psychology), 1985, 1989. B.A., Tennessee; M.S., Ph.D., Florida
- JOLLEY, KELLY D., *Associate Professor* (Philosophy), 1991, 1996. M.A., Ph.D., Rochester

Faculty and Staff

- JOLLY, CURTIS M., *Associate Professor* (Agricultural Economics & Rural Sociology), 1980, 1988, B.S., Tuskegee; M.S., Auburn; Ph.D., LSU
- JONES, DOROTHEA E., *Assistant to the Dean I* (Adm.-Architecture), 1976, 1987
- JONES, PETER D., *Associate Professor* (Mechanical Engineering), 1990, 1996, B.S., California; M.S., MIT; Ph.D., Rice
- JONES, RENWICK O., *Satellite Uplink Manager*, Telecom. & ETV, 1987, 1994, B.A., Alabama State
- JONES, SHARIE F., *Executive Assistant*, Student Affairs, 1996
- JONES, THOMAS F., *Instructor* (Curriculum & Teaching), 1989, 1990, B.S., Auburn; M.A., New York
- JONES, WILLIAM R., *Professor* (Animal & Dairy Science), 1975, 1983, B.S., Mississippi State; M.S., Ph.D., Virginia Tech
- JUDKINS, JOSEPH F., *Professor & Head* (Civil Engineering), 1989, 1993, B.S., M.S., Ph.D., Virginia Tech
- JUNGST, STEVE B., *Senior Research Associate* (Animal & Dairy Science), 1976, 1989, B.S., M.S., Iowa State
- JUSTER, ROBERT, *Visiting Professor* (Architecture), 1990, 1993, M.P.A., Harvard; M.A., Ph.D., Vanderbilt; M.B.A., Samford
- KAAS, SCOTT R., *Producer/Director III*, Union Building Operations, 1995, B.S., Texas; M.A., M.S., Auburn
- KAETZ, JAMES P., *Visiting Associate Professor* (English), 1993, B.A., Auburn; M.A., Alabama; Ph.D., North Carolina
- KAJIYA-MILLS, KAREN, *Research Specialist*, Institute for Biological Detection Systems, 1996, B.S., Michigan State
- KALLENBERG, OLAV H., *Professor* (Mathematics), 1986, B.S., M.S., M.S., Royal Tech; Ph.D., Chalmers
- KALTENBOECK, BERNHARD, *Assistant Professor* (Pathobiology), 1994, D.V.M., D.R., Veterinary Univ.; Ph.D., LSU
- KAMEN, MICHAEL, *Assistant Professor* (Curriculum & Teaching), 1991, B.A., Sunny Stony; M.S., Bank Street; Ph.D., Texas
- KAMINSKY, JAMES S., *Professor & Head* (Educational Foundations, Leadership & Technology), 1989, 1993, B.A., Minnesota; M.A., Ph.D., Michigan State
- KAMMERMAN, JOHN R., *Research Associate* (Anatomy & Histology), 1990, 1995, B.S., N. Illinois; M.S., Auburn
- KANDHAL, PRITHVI S., *Assistant Director* (Asphalt Technology Center), 1988, B.S., Rajasthan; M.S., Iowa State
- KARCHER, C. ROBERT, *Director*, Admissions, 1994, 1996, B.A., Old Dominion; M.Div., Southern Seminary; M.Ed., Auburn
- KARSMAN, DAVID L., *Trademark Professor* (Economics), 1986, 1988, B.S., Tennessee; Ph.D., Florida
- KATAINEN, VIENA L., *Associate Professor* (Foreign Languages & Literatures), 1987, 1995, B.A., British Columbia; M.A., Middlebury; Ph.D., Calif.-Berkeley
- KEEVER, GARY J., *Professor* (Horticulture), 1982, 1993, B.S., Clemson; M.S., Ph.D., Cornell
- KEITH, ROBERT E., *Professor* (Nutrition & Food Science), 1978, 1992, B.S., M.S., Florida State; Ph.D., Virginia Tech
- KELLEY, BETTY J., *Administrative Assistant III* (Electrical Engineering), 1973, 1990
- KELLEY, BILLY R., *Mechanical Engineer*, Architect's Office, 1993, B.S., Auburn
- KELLEY, RUSSELL L., *Research Specialist* (Animal & Dairy Science), 1991, B.S., Auburn
- KELLY, WILLIAM, *Assistant Professor* (Political Science), 1973, B.A., St. Michaels; M.A., New Mexico State; Ph.D., Nebraska
- KELLY, WILLIAM H., *Lead Systems Programmer*, Univ. Computing Services, 1988, B.S., S. Alabama
- KEMBLE, JOSEPH M., *Assistant Professor* (Horticulture), 1993, B.S., Delaware; M.S., Ph.D., North Carolina State
- KEMPFF, STEPHEN C., *Associate Professor* (Zoology-Wildlife Science), 1985, 1991, B.S., Case Inst. Tech.; Ph.D., Hawaii
- KEMPPAINEN, BARBARA W., *Associate Professor* (Physiology & Pharmacology), 1986, 1991, B.S., Ashland; M.S., Ohio State; Ph.D., Georgia
- KEMPPAINEN, ROBERT J., *Professor* (Physiology & Pharmacology), 1982, 1992, D.V.M., Michigan State; Ph.D., Georgia
- KENNEY, LAURIE L., *Academic Advisor* (Adm.-Pharmacy), 1992, 1995, B.S., Auburn
- KENT, WILLIAM E., *Associate Professor* (Nutrition & Food Science), 1989, 1990, B.S., Florida State; M.B.A., Michigan State; Ph.D., Georgia State
- KENWORTHY, RICHARD G., *Instructor* (Architecture), 1993, B.A., Chicago; M.A., Ph.D., California
- KEOWN, ALTON C., *Instructor* (Architecture), 1984, 1993, B.A., W. Kentucky
- KEOWN, WANDA H., *Senior User Services Specialist*, Academic Computing Services, 1983, 1989, B.S., W. Kentucky
- KENWORTHY, RICHARD G., *Visiting Associate Professor* (Architecture), 1996, B.A., Chicago; M.A., Ph.D., California
- KESSLER, J. RAYMOND, *Assistant Professor* (Horticulture), 1995, B.S., Auburn; M.S., Mississippi State; Ph.D., Georgia
- KHODADADI, JAYHOON M., *Associate Professor* (Mechanical Engineering), 1987, 1992, B.S., M.S., Ph.D., Illinois-Urbana
- KHODADADI, KAREN, *Research Associate*, Ctr. Governmental Services, 1988, B.S., M.S., Illinois
- KICKLIGHTER, JOSEPH A., *Professor* (History), 1975, 1991, B.A., Univ. of the South; M.A., Ph.D., Emory
- KILGORE, T. ALBERT, *Professor* (Mathematics), 1985, 1994, A.B., Michigan; Ph.D., Texas
- KILLIAN, JAMES L., *Associate Editor* (Adm.-Engineering), 1974, B.S., Ohio
- KILLINGSWORTH, ROGER A., *Associate Professor* (Building Science), 1985, 1991, B.S., M.S., Texas A&M
- KIM, JAI O., *Assistant Professor* (Consumer Affairs), 1992, B.S., Yonsei (Seoul); M.S., Ph.D., Maryland
- KINCAID, MICHAEL S., *Visiting Assistant Professor* (Marketing & Transportation), 1996, B.S., Montevallo; M.B.A., Tulane; M.A., Ph.D., Alabama
- KINCAID, STEVEN A., *Professor* (Anatomy & Histology), 1989, 1996, B.S., D.V.M., M.S., Ph.D., Purdue
- KINDY, DAVID G., *Training Assistant*, Athletic Department, 1995, B.S., Florida State; M.S., Michigan State
- KING, DAVID T., *Associate Professor* (Geology), 1980, 1986, B.S., NE Louisiana; M.S., Houston; Ph.D., Missouri
- KING, JOHN W., *Radiological Safety Officer*, Environmental Health, 1981, 1982, B.S., Auburn
- KING, LOI E. N., *Medical Technologist*, Student Health Center, 1994, 1995, M.T., Texas; M.B.A., Auburn
- KING, THOMAS R., *Senior Project Manager*, Facilities, 1990
- KINNUNAN, HENRY, *Professor* (Agricultural Economics & Rural Sociology), 1983, 1994, B.S., Illinois; M.S., Ph.D., Minnesota
- KIRBY, PEGGY R., *Academic Advisor I* (Adm.-Liberal Arts), 1988, 1990, B.S., Troy State
- KIRKICI, HULYA, *Assistant Professor* (Electrical Engineering), 1991, 1992, B.S., M.S., Mid. E. Tech; Ph.D., N.Y. Polytechnic
- KLEIN, PETER G., *Instructor* (Economics), 1994, B.A., North Carolina
- KLEMM, MARGARET F., *Assistant Professor* (Aerospace Engineering), 1993
- KLOBERG, LAURA J., *Art Designer II*, Univ. Printing Svc., 1992, B.S., Auburn
- KLOPPER, JOSEPH W., *Professor & Head* (Plant Pathology), 1989, 1992, B.Sc., M.Sc., Colorado State; Ph.D., California
- KLOSS, DARPA P., *Advancement Coordinator II* (Alumni Admin.), 1988, 1994, B.A., Auburn
- KNECHT, CHARLES D., *Professor & Head* (Small Animal Surgery & Medicine), 1979, B.S., Maryland; V.M.D., Pennsylvania; M.S., Illinois
- KNIGHT, CAROL, *Instructor* (Educational Foundations, Leadership & Technology), 1996, B.S., Montevallo; M.S., Jacksonville State; Ed.D., Auburn
- KNIGHT, RICHARD D., *Nuclear Science Specialist*, Nuclear Science Ctr., 1973
- KNIGHT, ROY W., *Assistant Professor* (Mechanical Engineering), 1986, B.S.M.E., M.S., Maryland; Ph.D., Texas
- KNIPSCHILD, ANN K., *Associate Professor* (Music), 1985, 1991, B.S., B.M., Missouri; M.M., Yale; D.M.A., SUNY
- KNOWLTON, STEPHEN F., *Associate Professor* (Physics), 1988, 1994, A.B., Middlebury; Ph.D., MIT
- KOCHAN, FRANCES, *Associate Professor & Director* (Truman Pierce Inst.), 1994, B.S., SUNY; M.Ed., Guam; Ph.D., Florida State
- KOHL, HERBERT H., *Associate Professor* (Chemistry), 1974, 1982, B.S., CCNY; M.S., Kansas; Ph.D., California

Faculty and Staff

- KOMPELLA, UDAYA B., *Assistant Professor* (Pharmacal Sciences), 1994. B.Pharm., Birla Inst.; M.Pharm., Jadavpur; Ph.D., Sou. California
- KONSTANT, GEORGE C., *Assistant Director*, International Programs, 1990. B.S., B.S., M.B.A., Auburn
- KOON, JOE L., *Associate Professor* (Agricultural Engineering), 1967. B.S., M.S., Ph.D., Auburn
- KOSZMIDER, PIOTR B., *Assistant Professor* (Mathematics), 1994. M.A., Warsaw; Ph.D., Toronto
- KOUIDIS, VIRGINIA M., *Associate Professor* (English), 1974. B.A., Michigan State; M.A., Ph.D., Iowa
- KOWALSKI, GREGORY S., *Professor & Chair* (Sociology), 1975, 1991. B.A., B.S., Moorhead; M.A., North Dakota; Ph.D., Kentucky
- KOWALSKI, JULIE P., *Assistant Director*, Payroll & Employee Benefits, 1992, 1993. B.S., Clemson
- KOZLOWSKI, GEORGE A., *Professor & Head* (Mathematics), 1976, 1986. B.A., Wesleyan; Ph.D., Michigan
- KOZLOWSKI, YVONNE L., *Librarian III & Head*, Library, 1976, 1992. B.A., M.A., M.L.S., Washington
- KRAMER, SCOTT W., *Assistant Professor* (Building Science), 1993. B.C.E., M.S.C.E., Auburn
- KRAMER, TIMOTHY A., *Assistant Professor* (Civil Engineering), 1997
- KRASKA, MARIE F., *Assistant Professor* (Vocational & Adult Education), 1988. B.S., M.S., Wisconsin; Ph.D., Missouri
- KRENTZ, JANICE L., *Instructor* (Foreign Languages & Literatures), 1992. B.A., M.L.S., M.A., Wisconsin-Madison
- KRIEL, RONALD J., *Safety Officer*, Environmental Health, 1987. B.S., M.S., Auburn
- KRIESE, LISA A., *Assistant Professor* (Animal & Dairy Sciences), 1993. B.S., Cornell; M.S., Kansas State; Ph.D., Georgia
- KRISHNAGOPALAN, GOPAL A., *Professor* (Chemical Engineering), 1984, 1996. B.S., Madras; B.S., Bombay; M.S., Ph.D., Maine
- KRISHNAMURTI, SRIDHAR, *Assistant Professor* (Communication Disorders), 1996. Ph.D., Kent State
- KRISTA, LAVERNE M., *Professor & Head* (Anatomy & Histology), 1969, 1988. M.S., South Dakota State; D.V.M., Ph.D., Minnesota
- KROTZ, RACHEL M., *Research Associate* (Animal & Dairy Sciences), 1990, 1994. B.S., Plattsburgh State; M.S., Kentucky
- KRTIC, ZDENKO, *Assistant Professor* (Art), 1992, 1993. B.F.A., Art Academy-Zagreb; M.F.A., Cincinnati
- KUERTEN, BRUCE G., *Producer/Director IV*, Telecom. & ETV, 1979, 1982. B.A., M.F.A., Yale
- KUERTEN, KIMBERLY A., *Assistant Director*, Small Business Development Center, 1982, 1993. B.S., M.B.A., Auburn
- KUHLERS, DARYL L., *Professor* (Animal & Dairy Science), 1978, 1984. B.S., Iowa State; M.S., Ph.D., Wisconsin
- KUHLMAN, BRADEN K., *Program Developer II*, Distance Learning & Outreach, 1995. B.S., Northwestern
- KUNKEL, MARK A., *Associate Professor* (Counseling & Counseling Psychology), 1993. B.S., M.Ed., Brigham Young; Ph.D., Tennessee
- KUNKEL, RICHARD C., *Dean* (Adm.-Education), 1990. B.S., Ed., NE Missouri State; M.Ed., Missouri; Ph.D., St. Louis
- KUNTZ, MARY E., *Associate Professor* (Foreign Languages & Literatures), 1993, 1995. B.A., Washington; M.Phil., M.A., Ph.D., Yale
- KUPERBERG, KRYSZYNA M., *Professor* (Mathematics), 1974, 1982. M.S., Warsaw; Ph.D., Rice
- KUPERBERG, WLODZIMIERZ, *Titled Professor* (Mathematics), 1974, 1996. M.S., Ph.D., Warsaw
- KURTZ, ROBIN, *Staff Psychologist/Counselor*, Drake Hlth. Ctr., 1992. B.A., Boston; M.A., W. Florida; Ed.D., Northern Arizona
- KUSH, JOHN S., *Senior Research Associate* (Forestry), 1985, 1993. B.S., Illinois; M.S., Auburn
- LABAND, DAVID N., *Professor & Head* (Economics), 1994. B.A., M.A., Ph.D., Virginia Polytechnic
- LACHER, KATHLEEN T., *Assistant Professor* (Marketing & Transportation), 1990. B.M.E., Ph.D., Florida State
- LA HAIE, BRIAN J., *Associate Professor* (Architecture), 1986, 1994. B.S., Sou. Illinois; M.L.A., Illinois
- LAIDLAW, KRISTINA L., *Research Associate* (Fisheries & Allied Aquacultures), 1996. B.A., Davidson; M.S., Georgia
- LAMBERT, ANN W., *Instructor* (Nursing), 1993. B.S., Auburn; B.S.N., Auburn-Montgomery; M.S.N., South Alabama
- LAMKE, LEANNE K., *Professor* (Human Development & Family Studies), 1985, 1995. B.A., North Dakota; M.S., Ph.D., Texas Tech
- LAND, DAN H., *Supervisor* (Horticulture), 1982, 1989. B.S., Auburn
- LANEY, JAMES W., *Lead Systems Programmer*, University Computing Services, 1983. B.S., Auburn
- LANFORD, BOBBY L., *Associate Professor* (Forestry), 1978. B.S., M.S., Clemson; Ph.D., SUNY
- LANGE, CLIFFORD R., *Assistant Professor* (Civil Engineering), 1993. B.A., New York-Buffalo; B.S., M.S., Ph.D., SUNY-Buffalo
- LANIER, ELIZABETH L., *Instructor* (Forestry), 1996. M.Com., Auburn
- LANKFORD, JOHN C., *Assistant Vice President*, Alumni & Development, 1991, 1995. B.S., M.S., Auburn; Ph.D., Alabama-Birmingham
- LARGE, DONALD L., *Executive Vice President*, 1986, 1997. B.S., M.Ed., Auburn
- LARKIN, JOHN R., *Assistant Athletic Trainer*, Athletic Dept., 1980. B.S., M.Ed., Auburn
- LARKIN, WILLIE D., *Assistant Professor* (Coop. Ext.), 1984. B.S., M.Ed., Tuskegee; Ph.D., Ohio State
- LAROCQUE, DANIEL J., *Associate Professor* (Theatre), 1990, 1994. B.A., Moorhead State; M.F.A., Washington
- LAROUX, LEONARD, *Associate Professor* (Art), 1985, 1989. B.A., M.F.A., Illinois-Edwardsville; M.A., SUNY-Albany
- LATIMER, DAN R., *Professor* (English), 1972, 1989. B.A., Texas; M.A., Ph.D., Michigan
- LATIMER, RENATE S., *Associate Professor* (Foreign Languages & Literatures), 1973, 1984. A.B., Wayne State; M.A., Ph.D., Michigan
- LATOUR, CAROLINE L., *Pharmacist* (Adm.-Pharmacy), 1996. B.S., Auburn; M.S., Mississippi
- LATOUR, MICHAEL S., *Associate Professor* (Mktg. & Transp.), 1991. B.B.A., M.B.A., Boise State; Ph.D., Mississippi
- LAU, TIN-MAN, *Associate Professor* (Indust. Engineering), 1986, 1991. B.S., National Taiwan; M.A., Ohio State
- LAUDERDALE, WILLIAM B., *Professor* (Educational Foundations, Leadership & Technology), 1964, 1982. B.S., Ed.M., Illinois; Ph.D., Michigan State
- LAUER, DWIGHT K., *Senior Research Associate* (Forestry), 1989, 1993. B.S., North Carolina State; M.S., Georgia
- LAUERMAN, LLOYD, *Adjunct Professor*, Dept. of Ag. & Industry, 1985. D.V.M., Washington State; Ph.D., Wisconsin
- LAUMER, J. FORD, JR., *Director & Associate Professor* (Marketing & Transportation), 1973, 1995. B.C.E., M.B.A., Auburn; Ph.D., Georgia
- LAWING, FRANK, *Professor and Head* (Military Science), 1996. B.A., Auburn; M.A., Webster
- LAWRENCE, JAMES D., *Assistant Director*, Student Development Services, 1987, 1990. B.S., M.Ed., Auburn
- LAWRY, THOMAS H., *Visiting Assistant Professor* (Psychology), 1993. B.A., Texas; M.A., Ph.D., Southern Illinois
- LAWTON, JACK C., *Lead Specialist*, Auburn Conference Center, 1990, 1994. M.B.A., Auburn
- LECHNER, JUDITH V., *Associate Professor* (Educational Foundations, Leadership & Technology), 1988, 1993. B.S., CCNY; M.L.S., Columbia; M.S.Ed., Auburn; Ph.D., California
- LECHNER, NORBERT M., *Professor* (Building Science), 1974, 1992. B.Arch. CCNY; M.S., Columbia
- LEDBETTER, FRANCES T., *Accountant I*, Auburn Conference Center, 1994. B.S., B.S., Auburn
- LEDBETTER, JERRY, *Supervisor*, Facilities, 1982, 1990.

Faculty and Staff

- LEDBETTER, LINDA H., *Assistant Manager, Bursar's Office*, 1981, 1993.
- LEDFOORD, BRUCE R., *Associate Professor (Educational Foundations, Leadership & Technology)*, 1985. B.S., M.A., Ed.D., East Tennessee State
- LEDFOORD, LADONNA E., *Clinical Instructor (Nursing)*, 1997
- LEE, DEBRA E., *Instructor (Curriculum & Teaching)*, 1993, 1995. B.S., Ohio State; M.S., Jacksonville State; Ed.S., Alabama
- LEE, JAY H., *Associate Professor (Chemical Engineering)*, 1991, 1995. B.S., Washington; Ph.D., Cal Tech
- LEE, MARGIE R., *Instructor (Music)*, 1994. B.S., Kent State
- LEE, MING-KUO, *Assistant Professor (Geology)*, 1995. B.S., National Taiwan; M.S., Ph.D., Illinois-Urbana
- LEE, SOO-YOUNG, *Associate Professor (Electrical Engineering)*, 1995. B.S., Seoul National; M.S., Korea Adv. Inst.; Ph.D., Texas
- LEE, SUNG C., *Visiting Associate Professor (Civil Engineering)*, 1994. B.S., Seoul National; M.S., Oregon State; Ph.D., Auburn
- LEE, TAMERA P., *Librarian III & Head, Library*, 1990, 1994. B.S., M.L.S., LSU
- LEE, YOON Y., *Professor (Chemical Engineering)*, 1974, 1984. B.S., Seoul National; M.S., South Carolina; Ph.D., Iowa State
- LENARD, TOMMY C., *Producer/Director IV, Telecom. & ETV*, 1976.
- LENOIR, CLINTON H., *Management Scientist, External Affairs/ATAC*, 1982, 1990. B.S., B.S., M.B.A., Auburn
- LENZ, STEPHEN D., *Associate Professor (Pathobiology)*, 1991, 1996. D.V.M., Ph.D., Purdue
- LEONARD, DOUGLAS A., *Associate Professor (Discrete & Statistical Sciences)*, 1981, 1986. B.S., Michigan; Ph.D., Ohio State
- LEPSIG, STEPHANIE M., *Research Assistant (Human Development & Family Studies)*, 1993. B.A., Albion
- LESTER, WILLIAM M., *Lead Specialist, University Computing*, 1991, 1995. B.S., Auburn
- LETT, SHEILA, *Specialist, Personnel*, 1990, 1994. B.A., Auburn
- LETT, VIOLET S., *Assistant Director, Accounts Payable*, 1995
- LEVETT, OTHEREA, *Supervisor, Facilities*, 1978, 1989.
- LEWIS, BRUCE R., *Executive Director, University Computing*, 1982, 1985. B.S., E. Kentucky; M.S., New Mexico State; Ph.D., Auburn
- LEWIS, JEFFREY S., *Associate Professor (Art)*, 1988, 1993. B.A., SUNY-Brockport; M.A., M.F.A., Iowa
- LEWIS, PHILIP M., *Professor (Psychology)*, 1977, 1984. A.B., Hamilton; M.A., Ph.D., Syracuse
- LEWIS, RONALD D., *Associate Professor (Geology)*, 1984, 1991. B.S., Iowa, Ph.D., Texas
- LEWIS, W. DAVID, *Distinguished University Professor (History)*, 1971, 1994. B.A., M.A., Penn State; Ph.D., Cornell
- LEY, TERRY C., *Professor (Curriculum & Teaching)*, 1974, 1987. B.A., N. Iowa; M.A., Ph.D., Iowa
- LI, PING, *Research Assistant (Fisheries & Allied Aquacultures)*, 1996. B.S., Fujian
- LIAO, MING, *Associate Professor (Mathematics)*, 1990, 1992. Ph.D., Stanford
- LIDDLE, BECKY J., *Assistant Professor (Counseling & Counseling Psychology)*, 1991. B.A., Oberlin; M.Ed., James Madison; Ph.D., North Carolina
- LIEN, ROGER J., *Associate Professor (Poultry Science)*, 1989, 1995. B.S., M.S., Texas A&M; Ph.D., North Carolina State
- LIN, CHING M., *Research Associate (Animal & Dairy Science)*, 1979, 1987. B.S., National Taiwan; M.S., Ph.D., Auburn
- LIN, HUI-CHU, *Associate Professor (Large Animal Surgery & Medicine)*, 1990, 1996. B.V.Sc., National Ping Tong; M.S., Illinois
- LIN, WENJIE, *Research Associate (Forestry)*, 1993. B.S., Nanjing; M.S., Chinese Academy; Ph.D., Virginia Tech
- LIN, YU, *Assistant Professor (Physics)*, 1994. B.S., Peking; M.S., Inst. Geophysics; Ph.D., Alaska
- LINCH, EUGENE T., *Technician (Radiology)*, 1990.
- LINDNER, CHARLES C., *Professor (Discrete & Statistical Sciences)*, 1989, 1990. B.S., Presbyterian; M.S., Ph.D., Emory
- LINDSEY, JAMES R., *Adjunct Professor (Pathobiology)*, 1982. B.S., D.V.M., Georgia; M.S., Auburn
- LIPHAM, STEVE R., *Associate Superintendent, Facilities*, 1976, 1995.
- LISANO, BRINDA P., *Assistant to the Dean I (VP-Academic Affairs)*, 1985, 1994.
- LISANO, MICHAEL, *Associate Dean & Associate Professor (Graduate School)*, 1970, 1996. B.S., M.S., Sam Houston; Ph.D., Texas A&M
- LISHAK, ROBERT S., *Associate Professor (Zoology-Wildlife Science)*, 1976. B.A., Seton Hall; Ph.D., Ohio State
- LITTLETON, DOROTHY W., *Advisor (Adm.-Liberal Arts)*, 1996. B.A., Auburn; J.D., North Carolina
- LITTLETON, GEORGE B., *Instructor (English)*, 1995. B.A., M.A., Auburn
- LITTLETON, MARY W., *Associate Editor, (English)*, 1989, 1993. B.A., Auburn
- LIU, ZHANJIANG, *Assistant Professor (Fisheries & Allied Aquacultures)*, 1995. B.S., Northwestern; M.S., Ph.D., Minnesota
- LIVANT, PETER D., *Associate Professor (Chemistry)*, 1977, 1984. B.S., Comm. Coll. New York; Ph.D., Brown
- LIVERANCE, DARWIN D., *Director, Personnel Services*, 1987. B.A., Michigan State; M.Ed., Indiana
- LLOYD, WILLIAM P., *Torchmark Professor (Adm.-Business)*, 1979, 1992. B.S., Florida; M.B.A., D.B.A., Indiana
- LOCKABY, BRUCE G., *Alumni Professor (Forestry)*, 1986, 1993. B.S., M.S., Clemson; Ph.D., Mississippi State
- LOCKHART, DAVID, *Assistant Manager, Food Services*, 1955, 1991.
- LOCKLAR, MARTHA S., *Assistant, Recruiting, Athletic Dept.*, 1977, 1984.
- LOCKROW, A. LYNN, *Associate Professor (Theatre)*, 1985, 1991. B.S., E. Tennessee State; M.F.A., North Carolina
- LOCY, ROBERT D., *Associate Professor & Director (Botany-Microbiology)*, 1991. A.B., Defiance; Ph.D., Purdue
- LODEN, D. KEVIN, *Associate Editor, University Relations*, 1985, 1994. B.A., Auburn
- LODEN, JO ANN J., *Senior Academic Advisor (Electrical Engineering)*, 1983, 1991. B.S., N. Alabama; M.Ed., Auburn
- LONGERAN, ELISABETH J. H., *Assistant Professor (Animal & Dairy Sciences)*, 1995. B.S., Missouri; M.S., Ph.D., Iowa State
- LONGERAN, STEVEN M., *Assistant Professor (Animal & Dairy Sciences)*, 1995. B.S., M.S., Iowa State; Ph.D., Nebraska
- LONG, JAMES E., *Titled Professor (Economics)*, 1974, 1994. A.B., Erskine; M.S., Ph.D., Florida State
- LONG, LARRY R., *Advancement Officer III, Alumni & Development*, 1985, 1990. B.S., Montevallo; M.S., Troy State
- LONG, LORENA F., *Coordinator, Adm.-Academic Affairs*, 1985, 1992. B.A., Auburn
- LONG, MELISSA A., *Supervisor, Telecommunications & ETV*, 1995, 1996. B.S., North Alabama
- LORD, RESA A., *Clinical Instructor (Nursing)*, 1996.
- LOTHROP, CLINTON D., *Professor, Ritchey Research*, 1992. D.V.M., Ph.D., Tennessee
- LOVE, CATHERINE C., *Director, Facilities*, 1984, 1992. B.S., Georgia Tech
- LOVE, THOMAS A., *Associate Professor (Building Science)*, 1987, 1993. B.S., Auburn; M.S., Colorado State
- LOVELL, RICHARD T., *Distinguished University Professor (Fisheries & Allied Aquacultures)*, 1969, 1995. B.S., M.S., Oklahoma State; Ph.D., LSU
- LOVETT, GARNETTA L., *Assistant Professor (Art)*, 1993, 1994. B.F.A., Berger; M.Ed., Long Island
- LOVINS, KARRIE W., *Research Associate (Plant Pathology)*, 1994. B.S., Florida Southern; M.S., Maryland
- LOVSHIN, LEONARD L., *Professor (Fisheries & Allied Aquacultures)*, 1972, 1985. B.S., Miami; M.S., Wisconsin; Ph.D., Auburn
- LOWRY, GEORGE R., *News Bureau Editor, University Relations*, 1990. B.S., Huntingdon
- LOWRY, JAMES L., *Professor & Coordinator (Electrical Engineering)*, 1963, 1984. B.E.E., M.E., Auburn; Ph.D., Florida

Faculty and Staff

- LOWTHER, G. SAM, *Executive Director, Planning & Analysis*, 1978, 1993. B.S., M.B.A., Auburn
- LU, TAO, *Specialist II, University Computing*, 1996. B.A., Nankai; B.S., Columbus Col.; M.B.A., York
- LUCAS, WALTER, *Instructor (Finance)*, 1995. B.S., South Carolina; M.A., Appalachian State; Ed.D., Oklahoma State
- LUMPKIN, NELDA B., *Administrative Assistant III, Facilities*, 1979, 1986.
- LUND, GREGORY N., *Manager, Transportation Services, Auburn University Police Department*, 1979. B.A., Auburn
- LUNDBERG, JOHN B., *Assistant Professor (Aerospace Engineering)*, 1994. B.S., MIT; M.S., Ph.D., Texas
- LUNDELL, CLARK E., *Professor & Head (Industrial Design)*, 1977, 1991. B.E.D., M.Arch., Texas A&M
- LUNDEY, ELIZABETH, *Assistant Director, Student Financial Aid*, 1993. B.A., M.Ed.
- LUSTIG, DANIEL C., *Assistant Professor (Rehabilitation & Special Education)*, 1995. B.A., M.A., Ph.D., Wisconsin; M.S.N., Michigan
- LUTHER, WILLIAM A., *Director, Research Development, Adm.-VP for Research*, 1985, 1988. B.S., West Point; M.A., Auburn
- LUZZO, DARRELL A., *Assistant Professor (Counseling & Counseling Psychology)*, 1996. B.A., California; M.A., Ph.D., UCLA
- LYNN, TODD A., *Research Lab Manager, Asphalt Technology Center*, 1994, 1996. B.S., Tennessee Tech
- LYON, ROBERT F., *Professor & Head (Art)*, 1995. B.A., Trenton State; M.F.A., Tyler
- MA, ERJIAN, *Visiting Scholar (Mechanical Engineering)*, 1995. B.Sc., Hefei; M.Sc., Beijing Research
- MACDONALD, JOHN M., *Associate Professor (Small Animal Surgery & Medicine)*, 1980, 1983. B.Ed., M.Ed., Plymouth State; D.V.M., Cornell
- MACDOUGALL, DANIEL M., *Research Assistant II (Chemical Engineering)*, 1996. B.S., Arizona State
- MACGINA, MICHAEL J., *Associate Professor (Fisheries & Allied Aquacultures)*, 1990, 1994. B.S., M.S., Florida; Ph.D., Texas A&M
- MACHIAN, TIBOR R., *Professor (Philosophy)*, 1986. B.A., McKenna; M.A., NYU; Ph.D., California-Santa Barbara
- MACINTIRE, DOUGLASS K., *Associate Professor (Small Animal Surgery & Medicine)*, 1990, 1996. B.A., Denison; B.S., D.V.M., Texas A&M; M.S., Auburn
- MACK, CHARLES G., *Director, Adm.-Facilities*, 1987, 1991. B.A., Miami
- MACKENZIE, MARK D., *Assistant Professor (Forestry)*, 1995. B.A., Kalamazoo; M.S., S. Illinois; Ph.D., Tennessee
- MACKOWSKI, DANIEL W., *Associate Professor (Mechanical Engineering)*, 1990, 1995. B.S., Centre; M.S., Ph.D., Kentucky
- MADDOX, DAVID K., *Assistant Director, Housing & Res. Life*, 1985, 1986. B.S., Auburn
- MADISON, KRISTEN J., *Personnel Analyst, Personnel Services*, 1996. B.S., M.S., Auburn
- MADRIGAL, JOSÉ A., *Professor & Chair (Foreign Languages & Literatures)*, 1970, 1995. B.A., M.A., Michigan State; Ph.D., Kentucky
- MADSEN, NELS H., *Associate Professor (Mechanical Engineering)*, 1978, 1984. B.A., M.S., Ph.D., Iowa
- MAGSHOODLOO, SAEED, *Professor (Indust. Engineering)*, 1989, 1984. B.S., M.S., Ph.D., Auburn
- MAGNESS, LARRY G., *Visiting Assistant Professor (Marketing & Transportation)*, 1984, 1990. B.S., Arkansas State; M.B.A., Ph.D., Arkansas
- MAHAN, MICHAEL P., *Director, Athletic Dept.*, 1992, 1993. B.S., M.A., Ed.D., Ball State
- MAHAN, PAMELA L., *Instructor (Health & Human Performance)*, 1992, 1993. B.S., M.A., Ball State
- MAKARCHUK, LISA G., *Medical Illustrator (Adm.-Vet. Med.)*, 1996. B.P.S., Nebraska; M.A., Johns Hopkins
- MALLICK, RAJIB B., *Senior Research Associate, Asphalt Technology Ctr.*, 1996. B.C.E., Jadavpur
- MALLOY, MICHAEL J., *Associate Professor (Clinical Pharmacy)*, 1989, 1994. B.S., Miami; B.S., Florida; Pharm.D., SUNY
- MANGES, DAVID J., *Assistant Professor (Military Science)*, 1996. B.A., North Georgia
- MANLEY, MARGARET W., *Provost's Secretary, Provost & VP-Academic Affairs*, 1974, 1993.
- MANNING, BRUCE B., *Senior Research Associate (Fisheries & Allied Aquacultures)*, 1994. B.S., Rutgers; M.S., Washington State; M.A., Auburn
- MANNING, JOHN H., *Supervisor (Adm.-Engineering)*, 1984, 1990. B.S., Faulkner
- MANSFIELD, PHILIP D., *Associate Professor (Small Animal Surgery & Medicine)*, 1978, 1996. D.V.M., Auburn
- MAPLES, GLENNON, *Professor (Chemical Engineering)*, 1966, 1976. B.S., M.S., Mississippi State; Ph.D., Oklahoma State
- MARCINKO, DOROTHY K., *Librarian III & Head, Library*, 1975, 1992. A.B., Philippines; M.L.S., Texas Woman's; Ed.S., Auburn
- MARGHITU, DAN B., *Assistant Professor (Mechanical Engineering)*, 1994. D.E., Craiova; D.E.A., Paul Sabatier; Ph.D., SMU
- MARGHITU, DANIELA, *Instructor (Computer Science & Engineering)*, 1996. M.S., Polytechnic Inst.
- MARION, ELIZABETH M., *Clinical Instructor (Nursing)*, 1994. B.S.N., Auburn
- MARION, JAMES E., *Dean of Agriculture, and Director, Agricultural Experiment Station*, 1988, 1997. B.S., Berea; M.S., Kentucky; Ph.D., Georgia
- MARKLE, CALVIN C., *Financial Aid Specialist, Student Financial Aid*, 1996. B.A., Auburn
- MARSHALL, ARVLE E., *Associate Professor (Anatomy & Histology)*, 1982, 1988. B.S., Texas Tech; D.V.M., Texas A&M; Ph.D., Missouri
- MARSHALL, THOMAS E., *Assistant Professor (Management)*, 1992. B.S., LSU
- MARTIN, FRANCES S., *Specialist III, Admin. Comp. Services*, 1980, 1982. B.S., Auburn
- MARTIN, MARY H., *Lead Specialist, Admin. Comp. Services*, 1986, 1992. B.S., Alabama; M.I.S., Auburn
- MARTIN, NEIL R., *Professor (Agricultural Economics & Rural Sociology)*, 1977, 1987. B.S., M.S., Auburn; Ph.D., Illinois
- MARTIN, RICHARD H., *Senior Research Associate (Forestry)*, 1978, 1993. B.S., M.S., Tennessee
- MARTINEZ, NATALIA, *Research Associate (Plant Pathology)*, 1993, 1996. B.S., De Los Andes; M.S., Virginia Tech
- MARTINSON, TOM L., *Professor (Geography)*, 1987, 1994. B.A., Oregon; Ph.D., Kansas
- MASK, COMER C., *Supervisor, Facilities*, 1980, 1995.
- MASK, PAUL L., *Associate Professor (Agronomy & Soils)*, 1982, 1988. B.S., Ga. State; M.S., Georgia; Ph.D., Ohio State
- MASON, ROBERT A., *Manager, Scientific Supply Store*, 1990. B.S., Tampa
- MASSER, MICHAEL P., *Associate Professor (Fisheries & Allied Aquacultures)*, 1989, 1993. B.A., Texas; M.A., Incarnate Word; Ph.D., Texas A&M
- MASUCCI, MICHELE M., *Assistant Professor (Geography)*, 1991. B.S., Salisbury State; M.A., Ph.D., Clark
- MATTHEWS, BRUCE E., *Instructor (History)*, 1991, 1996. B.A., M.A., Salisbury State
- MATTHEWS, CAROLYN G., *Instructor (Health & Human Performance)*, 1990. B.A., Birmingham Sou.; M.Ed., Auburn
- MATTHEWS, MAURICE S., *Advisor, VP for Extension*, 1977. B.A., M.Ed., Ed.D., Virginia
- MATTOX, KATHIE L., *Assistant Director, Provost & VP-Academic Affairs*, 1993. B.A., Judson
- MAXWELL, JOHNNY K., *Instructor (Civil Engineering)*, 1994. B.S., M.C.E., Auburn
- MAXWELL, MELISSA, *Greenhouse Supervisor, Landscape Service*, 1987, 1996.
- MAYE, LORRAINE, *Student Recruiter, Admissions*, 1996. B.S., M.S., Troy State; M.P.A., Auburn
- MAZAHERI, H. JEAN, *Associate Professor (Foreign Languages & Literatures)*, 1989, 1994. B.A., Tehran; M.A., Provence; M.F.A., Des Beaux Arts; Ph.D., Brown

Faculty and Staff

- McADAMS, PATRICIA D., *Associate Professor & Head (Theatre)*, 1991. B.S., Oklahoma Baptist; M.A., Denver; Ph.D., Colorado
- McARTHUR, FRANCES C., *Assistant to the Dean II, Library*, 1969.
- McCALL, CYNTHIA A., *Assistant Professor (Animal & Dairy Science)*, 1989. B.S., Tennessee; M.S., Ph.D., Texas A&M
- McCARTHY, JOHN R., *Assistant Director (Civil Engineering)*, 1995. B.C.E., M.S.C.E., Auburn
- McCASKEY, THOMAS A., *Professor (Animal & Dairy Science)*, 1967, 1982. B.S., Ohio; M.S., Ph.D., Purdue
- McCLAIN, WILLIAM D., *Manager, Food Services*, 1983, 1993.
- McCLANAHAN, MICHAEL C., *Instructor (Rehabilitation & Special Education)*, 1988, 1994. B.S., Auburn; M.Ed., Georgia
- MCCLLELAND, KATHLEEN A., *Instructor (English)*, 1995. B.A., Huntington; M.Ed., Auburn-Montgomery; Ph.D., NYU
- McCONATHA, BARRY J., *Research Associate (Pharmacy Care Sys.)*, 1981, 1990. B.A., Alabama; M.A., Auburn
- McCORD, BRENDA L., *Senior Academic Advisor (Adm.-Human Services)*, 1966, 1987. B.A., Auburn
- McCORD, SAMMY O., *Associate Professor (Finance)*, 1973, 1989. A.B., LaGrange; M.B.A., Auburn; Ph.D., Arizona
- McCORMICK, ELIZABETH L., *Manager, Payroll & Employee Benefits*, 1972.
- McCORMICK, ROBERT F., *Research Superintendent (Agronomy & Soils)*, 1966. B.S., Mississippi State
- McCOY, JAMES F., *Associate Professor (Psychology)*, 1973. B.S., M.S., Ph.D., Memphis State
- McCOY, JANET L., *Associate Editor, University Relations*, 1986, 1988. B.S., Troy State
- MCCLLELAND, KATHLEEN A., *Instructor (English)*, 1995. B.A., Huntington; M.Ed., Auburn-Montgomery; Ph.D., New York
- McCREARY, CAROLYN L., *Associate Professor (Computer Science & Engineering)*, 1989, 1993. B.A., Gettysburg; M.A., Ph.D., Colorado
- McCROBIE, LORI A., *Senior Auditor, Internal Auditing*, 1993. B.S., Akron
- McCULLERS, GAIL H., *Director, Housing & Res. Life*, 1966. B.S., M.Ed., Auburn
- McCULLOUGH, SHAYNE, *Instructor (Nursing)*, 1996. B.S.N., Auburn; M.N., Emory
- MCCURDY, DOROTHY B., *Work Management Supervisor, Facilities Division*, 1989, 1996.
- McCURLEY, HENRY H., *Librarian III, Library*, 1989, 1996. A.B., M.A., Ph.D., Georgia; M.L.M., South Carolina
- McDANIEL, CHARLOTTE E., *Medical Technologist (Pathobiology)*, 1974. B.S., Auburn
- McDANIEL, GAYNER R., *Professor (Poultry Science)*, 1968. B.S., M.S., Auburn; Ph.D., Kansas State
- McDANIEL, RANDALL S., *Associate Professor (Rehabilitation & Special Education)*, 1974, 1983. B.S.O.T., M.R.C., Florida; Ed.D., Auburn
- McDONALD, LAURA, *Interior Designer, Facilities*, 1986. B.I.D., Auburn
- McDONOUGH, JAMES L., *Professor (History)*, 1988. B.A., David Lipscomb; M.A., Abilene Christian; Ph.D. Florida State
- McDONOUGH, SHARON L., *Instructor (Foreign Languages & Literatures)*, 1996. B.A., David Lipscomb; M.Ed., M.F.S., Auburn
- McDURMONT, BENNIE, *Counselor, Student Development Services*, 1992, 1993. B.S., Troy State; M.Ed., Auburn-Montgomery
- McELDOWNEY, RENÉ P., *Assistant Professor (Political Science)*, 1992, 1994. B.A., West Virginia College; M.B.A., Marshall
- McFARLAND, STEPHEN L., *Professor (History)*, 1981, 1995. Ph.D., Texas
- McGEE, DAVID J., *Research Associate (Animal & Dairy Sciences)*, 1988, 1994. B.A., M.S., Auburn
- McGLYNN, BRENDA G., *Nurse Practitioner (Nursing)*, 1996.
- McGLYNN, FRANCIS D., *Professor (Psychology)*, 1990. M.A., Missouri Valley; M.A., Ph.D., Missouri
- McINROY, JOHN A., *Research Associate (Plant Pathology)*, 1989, 1992. B.S., Auburn
- McIVER, ALLEN, *Construction Manager, Facilities*, 1986, 1994.
- McKEE, MICHAEL L., *Professor (Chemistry)*, 1981, 1994. B.S., Lamar; Ph.D., Texas
- McKELLY, JAMES, *Assistant Professor (English)*, 1990. B.A., Walbank; M.A., Ph.D., Indiana
- McLAUGHLIN, SUSAN A., *Associate Professor (Small Animal Surgery & Medicine)*, 1989. M.S., Illinois; D.V.M., Purdue
- MCLENDON, SUZANNE J., *Art Designer II (Adm. Engineering)*, 1995, 1996. B.S., Samford
- McMANIS, JENNIFER, *Assistant Professor (Computer Science & Engineering)*, 1994. B.S., B.S., Maryland; M.S., Ph.D., California
- McNABB, KENNETH L., *Associate Professor (Forestry)*, 1989, 1994. B.S., M.S., Sou. Illinois; Ph.D., Florida
- McNABB, MIRIAM, *Chief Medical Technologist, Student Health Center*, 1993. B.S.
- McVAY, JOHN R., *Associate Professor (Entomology)*, 1976, 1988. B.S., N. Alabama; M.S., Auburn
- MECK, GAIL S., *Instructor (Sociology)*, 1996. B.S., Auburn; J.D., Jones Law
- MEEKS, TIMOTHY A., *Director of Marketing, Alumni Administration*, 1996. B.A., Auburn
- MEETZE, VICTORIA G., *Business Office Manager, Athletic Department*, 1984, 1994. B.A., Faulkner; M.S., Troy State
- MEIR, AMNON, *Associate Professor (Mathematics)*, 1989, 1994. B.Sc., Israel Inst. Tech; Ph.D., Carnegie Mellon
- MEJIAS, CARLOS E., *Assistant Professor (Military Science)*, 1993. B.B.A., Cayey; M.A., Central Michigan
- MELANCON, MICHAEL S., *Associate Professor (History)*, 1984, 1990. B.A., Loyola; M.A., Ph.D., Indiana
- MELDAHL, RALPH S., *Assistant Professor (Forestry)*, 1979. B.S., M.S., Ph.D., Wisconsin-Madison
- MELLER, RUSSELL D., *Assistant Professor (Industrial Engineering)*, 1992. B.S.E., M.S.E., Ph.D., Michigan
- MELTON, MINNIE E., *Assistant to the Dean II, Library*, 1972, 1994.
- MELVILLE, JOEL G., *Professor (Civil Engineering)*, 1979, 1995. B.S., Ph.D., Penn State; M.S., Texas
- MELVIN, EMILY A., *Assistant Dean (Adm.-Education)*, 1976, 1993. B.S., Old Dominion; M.Ed., Ed.D., Virginia
- MENDONCA, MARY, *Assistant Professor (Zool.-Wildlife Science)*, 1991. B.A., Rutgers; M.S., Central Florida; Ph.D., California-Berkely
- MENEZES, ALFRED J., *Assistant Professor (Discrete & Statistical Sciences)*, 1992, 1994. B.A., M.A., Ph.D., Waterloo
- MENNIEFEE, KYONG, *Accountant II (Chemical Engineering)*, 1992, 1997. B.S., Auburn
- MERCER, MICHAEL L., *Assistant Professor (Journalism)*, 1994. B.S., Lambuth
- METCALF, HILARY B., *Instructor (Communication)*, 1996. B.A., Washington U.; M.A., Auburn
- MIDDLETON, RENEE, *Assistant Professor & Director (Adm.-Education)*, 1990, 1994. B.A., Andrews; M.A., Tennessee; Ph.D., Auburn
- MIKEL, WILLIAM B., *Associate Professor (Animal & Dairy Science)*, 1988, 1993. B.S., Auburn; M.S., Ph.D., Mississippi State
- MILEY, GLENDA M., *Manager, University Printing Service*, 1994, 1996.
- MILLER, EDITH A., *Associate Professor (Educational Foundations, Leadership & Technology)*, 1972. B.S., M.S., Southern Mississippi; Ed.D., Georgia
- MILLER, MARY S., *Assistant Professor (Agronomy & Soils)*, 1993. B.S., M.S., LSU; Ph.D., Colorado State
- MILLER, MICHAEL S., *Lead Specialist, Academic Computing Services*, 1985, 1990. B.S., M.S., Penn State
- MILLER, RALPH E., *Associate Professor (Theatre)*, 1974. B.S., Kent State; M.A., Kansas; Ph.D., Wayne State
- MILLER, SCOTT H., *Instructor (Building Science)*, 1990. B.S., Southern Mississippi
- MILLER, STARR C., *Pharmacist (Small Animal Surgery & Medicine)*, 1988. B.S., Auburn
- MILLER, SUSIE J., *Assistant to the Dean I (Nursing)*, 1975, 1993. B.S., Auburn
- MILLER, VIKKI A., *Administrator (Curriculum & Teaching)*, 1985. B.S., M.Ed., South Alabama; Ed.D., Auburn

Faculty and Staff

- MILLIKEN, GARRETT W., *Visiting Assistant Professor* (Psychology), 1996. B.A., Ohio U.; M.S., Ph.D., Memphis
- MILLMAN, RICHARD G., *Visiting Professor* (Architecture), 1989. B.Arch., M.Arch., Michigan
- MILLS, GERMAN, *Associate Professor* (Chemistry), 1989, 1995. M.S., Chile; Ph.D., Tech Univ.-Berlin
- MILLY, KATHRYN A., *Med. Tech. & Adjunct Instructor* (Chemistry), 1989. B.S., M.S., Auburn; B.S., St. Margaret's
- MIN, HOKEY, *Associate Professor* (Marketing & Transportation), 1992, 1995. B.A., Hankuk; M.B.A., Yonsei; M.B.A., South Carolina; M.A., Ph.D., Ohio State
- MINC, JOANNA K., *Medical Technologist* (Pathobiology), 1983. M.S., Lodz
- MINC, PIOTR, *Professor* (Mathematics), 1982, 1989. M.S., Ph.D., Warsaw
- MIRANDA, FRANCISCO, *Assistant Professor* (Foreign Language), 1994. B.A., California State; M.A., Yale
- MIRARCHI, RALPH E., *Professor* (Zoology-Wildlife Science), 1978, 1988. B.S., Muhlenberg; M.S., Ph.D., Va. Tech
- MITCHELL, DONNA D., *Accountant III*, AU Conference Ctr., 1982, 1990. B.S., Auburn
- MITCHELL, ALFRED H., *Executive Director*, Governmental Affairs, 1993. B.A., Auburn
- MITCHELL, ANITA B., *Medical Technologist* (Pathobiology), 1987, 1988. B.S., Auburn
- MITCHELL, CHARLES C., *Ext. Specialist & Professor* (Agronomy & Soils), 1984, 1995. B.S., Birmingham Southern; M.S., Auburn; Ph.D., Florida
- MITCHELL, JAMES F., *Manager*, Personnel Services, 1987. B.S., Auburn; M.Div., New Orleans Bap.; D.Min., Luther Rice
- MITRA, AMITAVA, *Associate Dean* (Adm.-Business) & *Professor* (Management), 1979, 1993. B.T., D.J.I.T., Indian Inst. Tech; M.S., Kentucky; Ph.D., Clemson
- MITRA, SUJATA, *Specialist III*, University Computing, 1996. B.S., Calcutta; M.S., Auburn
- MITREWSKI, GEORGE, *Associate Professor* (Foreign Languages & Literatures), 1983, 1995. B.A., SUNY; M.A., Ph.D., Ohio State
- MIXSON, A. DAVID, *Programs Assistant*, Division of External Affairs/ATAC, 1994. B.S., Auburn
- MIZE, JACQUELYN, *Associate Professor* (Human Development & Family Studies), 1984, 1990. B.A., M.S., Georgia; Ph.D., Purdue
- MOAR, WILLIAM J., *Associate Professor* (Entomology), 1990, 1996. B.A., B.S., Oregon State; M.S., Ph.D., California
- MOCKBEE, SAMUEL, *Professor* (Architecture), 1991, 1992. B.Arch., Auburn
- MOHAN, RAJ P., *Professor* (Sociology), 1973, 1984. B.S., Agra-India; M.A., Maine; Ph.D., North Carolina State
- MOLNAR, JOSEPH J., *Professor* (Agricultural Economics & Rural Sociology), 1976, 1989. B.A., M.A., Kent State; Ph.D., Iowa State
- MOLT, LAWRENCE F., *Assistant Professor* (Communication Disorders), 1995. M.S., S. Florida; Ph.D., Tennessee
- MONCUS, DAVID L., *Data Base Administrator*, Univ. Computing Services, 1983, 1986. B.S., Auburn; J.D., Jones Law
- MONKS, CHARLES D., *Assistant Professor* (Agronomy & Soils), 1993
- MONTGOMERY, RONALD D., *Associate Professor* (Small Animal Surgery & Medicine), 1990, 1995. D.V.M., M.S., Auburn
- MONTJOY, ROBERT S., *Director & Professor* Economic Development Inst., 1979, 1995. B.A., Mississippi; M.A., Alabama; Ph.D., Indiana U.
- MOON, RANDY, *Director*, Mechanical Shop, 1996. B.S., Auburn
- MOORE, LARRY J., *Manager*, Vet. LRC, 1983, 1984. B.A., M.A., Auburn
- MOORE, LORETTA, A., *Associate Professor* (Computer Science & Engineering), 1991, 1996. B.S., Jackson State; M.S., Ph.D., Illinois
- MORA, SIXTUS E., *Research Supervisor* (Poultry Science), 1986, 1993
- MORACCO, JOHN C., *Professor* (Coun. & Coun. Psychology), 1977, 1990. B.S., SUNY; M.A., Arizona State; Ph.D., Iowa
- MORAN, EDWIN T., *Professor* (Poultry Science), 1986. B.S., Rutgers; M.A., Ph.D., Washington State
- MORAN, MICHAEL J., *Associate Professor & Chair* (Communication Disorders), 1983, 1996. B.S., E. Stroudsburg; M.A., Wichita State; Ph.D., Penn State
- MOREMAN, MARK D., *Administrator-Hospital* (Large Animal Surgery & Medicine), 1981, 1986. B.S., Auburn
- MORGAN-JONES, GARETH, *Distinguished University Professor* (Plant Pathology), 1973, 1994. B.Sc., D.Sc., Wales; M.Sc., Ph.D., Nottingham
- MORGAN, CHERYL E., *Professor* (Architecture), 1992, 1995. B.A., B.Arch., Auburn; M.Arch., Illinois
- MORGAN, JOE M., *Associate Professor* (Civil Engineering), 1971. B.S., Tennessee Tech; M.S., Ph.D., Virginia Tech
- MORGAN, JOHN S., *Associate Professor* (Art), 1981, 1987. B.F.A., Memphis; M.F.A., Syracuse
- MORGAN, JULIA M., *Associate Professor* (Music), 1973, 1982. B.M., M.M., Alabama
- MORGAN, R. GILLIS, *Associate Professor* (Journalism), 1977, 1984. B.A., M.A., Alabama
- MORIARTY, C. MICHAEL, *Associate Provost & Vice President for Research* (Adm.-VP Research), 1994. B.S., Carnegie Mellon; M.S., Cornell; Ph.D., Rochester
- MORLIER, MARGARET M., *Assistant Professor* (English), 1991. M.A., New Orleans; Ph.D., Tennessee
- MORRIS, DREWRY H., *Associate Professor* (Foreign Languages & Literatures), 1974. A.B., Davidson; M.A., M.Phil., Yale; Ph.D., North Carolina
- MORRIS, ERNESTINE, *Advisor*, Distance Learning & Outreach, 1988, 1993
- MORRIS, IVY, *Nurse Practitioner*, Student Hlth. Ctr., 1992. R.N., Univ. West Indies (Jamaica); N.P., Maharry Medical
- MORRIS, KAREN R., *Instructor* (Foreign Language), 1996. B.A., M.H.S., Auburn
- MORRIS, MELISSA M., *Accountant III*, Contracts & Grants Accounting, 1993, 1996. B.S., Auburn
- MORRIS, TRELLYS A., *Assistant Professor* (Vocational & Adult Education), 1993, 1994. B.S., M.S., Ed.D., Oklahoma State
- MORRISON, EDWARD E., *Associate Professor* (Anatomy & Histology), 1990. B.S., Massachusetts; M.S., Ph.D., Kansas State
- MORRISON, NANCY E., *Research Associate*, Ritchey Research, 1994. B.S., M.S., S. Dakota State
- MORROW, PATRICK D., *Professor* (English), 1975. A.B., Sou. California; M.A., Ph.D., Washington
- MORTON, ANNE H., *Coordinator*, Athletic Dept., 1973, 1984
- MORTON, DORIS B., *Associate Professor* (English), 1989, 1991. B.A., Dillard; A.M.T., Radcliffe; M.A., Texas
- MOSEBACH, MICHAEL, *Visiting Assistant Professor* (Accountancy), 1995. A.B., Oklahoma; B.S., Nevada; M.B.A., Sonoma State
- MOSJIDIS, JORGE A., *Professor* (Agronomy & Soils), 1985, 1996. A.D., Chile; Ph.D., California
- MOSLEY, MARILYN A., *Academic Advisor* (Adm.-Engineering), 1988, 1992. B.S., Auburn
- MOSS, ANTHONY G., *Assistant Professor* (Zoology-Wildlife Science), 1992. B.A., Johns Hopkins; Ph.D., Boston U.
- MOSS, BUELON R., *Professor* (Animal & Dairy Science), 1983, 1984. B.S., Berea; Ph.D., Tennessee
- MOUTON, JOHN C., *Professor & Head* (Building Science), 1992. B.S., NE Louisiana; M.B.C., Florida
- MOYERS, JAMES E., *Research Assistant II* (Zoology-Wildlife Science), 1994
- MUELLER, ELIZABETH H., *Assistant Director*, VP-Student Affairs, 1993. B.A., M.Ed., Auburn
- MUIR, RONALD L., *Research Associate* (Forestry), 1996. B.S., Massachusetts; M.S., New Hampshire
- MULLEN, GARY R., *Professor* (Entomology), 1975, 1989. B.A., Northeastern; M.S., Ph.D., Cornell
- MULLINS, GREGORY L., *Professor* (Agronomy & Soils), 1985, 1996. B.S., Berea; M.S., Virginia Tech; Ph.D., Purdue

Faculty and Staff

- MULLINS, IRIS, *Instructor* (Nursing), 1993. B.S.N., Berea; M.S.N., Troy State
- MULVANEY, DONALD R., *Associate Professor* (Animal & Dairy Science), 1983, 1991. A.S., L.L.C.C., Springfield; M.S., Ph.D., Michigan State
- MUNDAY, CHARLES W., *Associate Professor* (Art), 1977, 1984. B.F.A., Tennessee; M.F.A., SUNY-Buffalo
- MUNDAY, MARY M., *Facilitator*, Auburn Conference Center, 1988, 1995
- MUNTERFERING, RUSSELL B., *Professor*, Ag. Experiment Station, 1990, 1996. B.S., M.S., California; Ph.D., Arizona
- MURPHY, AMY B., *Assistant Director* (Accountancy), 1994. B.S., M.A., Auburn
- MURPHY, JOHN F., *Assistant Professor* (Plant Pathology), 1994. B.S., Springfield; M.S., Clemson; Ph.D., Illinois
- MURPHY, LIAM, *Assistant Professor* (Computer Science & Engineering), 1994. B.S., Ireland; M.S., Ph.D., California
- MURRAY, BRUCE A., *Assistant Professor* (Curriculum & Teaching), 1996. B.A., Quincy; M.S.Ed., M.S.Ed., Southwest Missouri; Ph.D., Georgia
- MUSE, WILLIAM V., *President & Professor* (Marketing & Transportation), 1992. B.S., Northwestern State; M.B.A., Ph.D., Arkansas
- MUSGROVE, MARY B., *Extension Program Associate* (Horticulture), 1994. B.S., North Alabama; M.S., Auburn
- MUSSO, RICHARD E., *Associate Professor* (Botany-Microbiology), 1991. B.S., Stanford; Ph.D., California-Los Angeles
- MYERS, EMILY W., *Director* (Sociology), 1987, 1994. B.S., S. Maine; M.S.W., LSU
- MYERS, KRISTINA C., *Advancement Officer I*, Alumni Administration, 1993, 1994. B.S., Auburn
- MYERS, LAWRENCE J., *Associate Professor* (Physiology & Pharmacology), 1982, 1996. B.S., M.S., Ph.D., Oklahoma State; D.V.M., Mississippi State
- MYLES, DEBORA C., *Instructor* (Art), 1994, 1996. B.A., Auburn-Montgomery
- MYRICK, ROGER K., *Assistant Professor* (Communication), 1994. B.A., M.A., Ph.D., Oklahoma
- NADAR, THOMAS R., *Associate Professor* (Foreign Languages & Literatures), 1987, 1993. B.A., Notre Dame; M.A., Ph.D., Michigan
- NAKHJAVAN, BEHZAD B., *Associate Professor* (Architecture), 1988, 1993. B.Arch., Mississippi State; M.Arch., Washington
- NARAYANAN, N. HARI, *Assistant Professor* (Computer Science & Engineering), 1996. B.E., Birla; M.E., Indian Inst.; M.S., Rochester; Ph.D., Ohio State
- NARCISO, SIDNEY J., *Engr./Arch. Design*, Architect's Office, 1990, 1994. B.A., Auburn
- NATARAIAJAN, RAJAN, *Associate Professor* (Marketing & Transportation), 1988, 1994. B.Tech., Indiana Inst. Tech.; M.B.A., McGill; Ph.D., Drexel
- NAUGHTON, ALBERT S., *Ticket Manager*, Athletic Department, 1995. B.A., Auburn
- NAVARRE, CHRISTINE B., *Assistant Professor* (Large Animal Surgery & Medicine), 1994. M.S., Texas A&M; M.D.V. LSU
- NEELY, WILLIAM C., *Professor* (Chemistry), 1966, 1989. B.S., Mississippi State; M.S., Ph.D., LSU
- NELL, CARLTON E., *Associate Professor* (Art), 1992, 1996. B.F.A., Auburn
- NELMS, ROBERT M., *Associate Professor* (Electrical Engineering), 1984, 1994. B.E.E., M.S., Auburn; Ph.D., Virginia Tech
- NELSON, BARBARA K., *Librarian III*, Library, 1978, 1990. B.A., Cent. Michigan; M.A., Michigan State; M.L.S., Michigan
- NELSON, ROBERT G., *Associate Professor* (Agricultural Economics & Rural Sociology), 1989, 1995. B.S., Oregon State; M.S., Auburn; Ph.D., Texas A&M
- NELSON, VICTOR P., *Associate Professor* (Electrical Engineering), 1978, 1982. B.S.E.E., Kentucky; M.S., Ph.D., Ohio
- NEMBARD, DAVID A., *Assistant Professor* (Management), 1994. B.S., M.S., Case Western; M.S., Ph.D., Michigan
- NEMBARD, HARRIET B., *Assistant Professor* (Industrial Engineering), 1994. B.A., Claremont; B.S., Arizona State; M.S., Ph.D., Michigan
- NESBITT, MONTE L., *Extension Specialist* (Horticulture), 1994. B.S., Texas Tech; M.S., Texas A&M
- NESBITT, DAURENE, *Research Associate* (Forestry), 1993, 1995. B.S., SUNY; M.S., Auburn
- NEUMAN, RONALD D., *Titled Professor* (Chemical Engineering), 1985, 1995. B.S., Washington; M.S., Ph.D., Inst. of Paper Chemistry
- NEVIN, CHARLES W., *Public Safety Director*, AU Police Dept., 1980, 1994
- NEWELL, HERBERT, *Supervisor*, Facilities, 1990
- NEWKIRK, SANDRA B., *Assistant Professor* (Health & Human Performance), 1966. B.S., Purdue; M.S., M.S., Indiana
- NEWLAND, FRANK, *Specialist II*, Telecommunications & ETV, 1990, 1993. B.S., Auburn
- NEWLAND, M. CHRISTOPHER, *Associate Professor* (Psychology), 1988, 1991. B.E.E., Auburn; M.S., Ph.D., Georgia Tech
- NEWTON, JOSEPH C., *Associate Professor* (Pathobiology), 1993. D.V.M., M.S., Ph.D., Auburn
- NEWTON, WILLIAM R., *Supervisor*, Facilities, 1984, 1986
- NICHOLS, AMY J., *Research Associate* (Fisheries & Allied Aquacultures), 1992, 1995
- NICHOLS, JENNIFER, *Instructor* (Educational Foundations, Leadership & Technology), 1996. B.S., M.A., Ed.D., Auburn
- NICOL, JEAN-PAUL, *Instructor* (Civil Engineering), 1984, 1994. B.S., Rensselaer; M.S., Hawaii; M.S., Ph.D., Auburn
- NICOL, LIZABETH B., *Library Auto. Manager*, Library, 1984. B.S., Auburn
- NIEBUHR, ROBERT E., *Associate Professor & Head* (Management), 1977, 1994. B.S., Cincinnati; M.S., Ph.D., Ohio State
- NIELSEN, BRENT L., *Associate Professor* (Botany-Microbiology), 1988, 1993. B.S., BYU; Ph.D., Oregon State
- NOLEN, JULIE R., *Development Coordinator*, Alumni Administration, 1996. B.A., Auburn
- NORRELL, GEORGE W., *Associate Director*, Governmental Relations, 1994. B.A., Auburn
- NORRIS, DWIGHT R., *Associate Professor* (Management), 1977, 1984. B.S., Valdosta State; M.B.A., Ph.D., Georgia
- NORTON, ROBERT A., *Assistant Professor* (Poultry Science), 1995. B.S., M.S., S. Illinois; Ph.D., Arkansas
- NOVAK, JAMES L., *Ext. Specialist & Professor* (Agricultural Economics & Rural Sociology), 1985, 1995. B.S., M.S., New Hampshire; Ph.D., Clemson
- NOVAK, JENNIFER A., *Instructor* (Zoology-Wildlife Science), 1992, 1995. B.S., Appalachian State
- NOWICKI, NANCY J., *Executive Assistant*, Provost Office, 1985, 1995
- NUNNALLY, THOMAS, *Associate Professor* (English), 1984, 1992. B.A., Alabama; M.A., Ph.D., Georgia
- NUNNALLY, SUSAN, *Associate Director*, Intramural Sports, 1973, 1985. B.S., M.Ed., Auburn
- NUSBAUM, KENNETH E., *Associate Professor* (Pathobiology), 1982, 1989. B.S., D.V.M., Cornell; M.S., Ph.D., Georgia
- NYLEN, PETER M., *Associate Professor* (Mathematics), 1989, 1994. B.S., Stetson; M.S., Ph.D., Clemson
- ODOM, JOHN W., *Associate Professor* (Agronomy & Soils), 1977. B.S., M.S., Tennessee; Ph.D., Purdue
- OGBURN, CHARLES B., *Associate Professor* (Agricultural Engineering), 1977, 1985. B.S., M.S., Virginia Tech; Ph.D., Auburn
- OGDEN, ARTHUR G., *Assistant Athletic Director*, Athletic Department, 1995. B.A., LaSalle; M.A., Delaware; Ph.D., Walden
- OGWYNN, JENNIFER J., *Academic Advisor* (Chemical Engineering), 1996. B.S., Auburn
- O'HALLORAN, DANIEL, *Laboratory Manager* (Physics), 1996. B.S., B.S., Auburn
- O'HEARN, ROBIN E., *Instructor* (Psychology), 1994, 1996. B.A., M.A., Ph.D., South Carolina
- OH, KYEONG K., *Visiting Scientist* (Chemical Engineering), 1996. B.S., M.S., Ph.D., Korea U.
- OI, FAITH M., *Ext. Specialist & Assistant Professor* (Entomology), 1995. B.A., M.S., Hawaii; Ph.D., Florida
- OKS, EVGUENI, *Professor* (Physics), 1990, 1992. M.S., Ph.D., Physical Tech; Dr. Sci., Inst. of USSR

Faculty and Staff

- O'LEARY, VIRGINIA E., *Professor & Chair* (Psychology), 1994. B.A., Chatham; M.A., Ph.D., Wayne State
- OLEINICK, THEREZA B., *Assistant Professor* (Theatre), 1996. B.A., Iowa; M.F.A., California Inst.
- OLLIFF, DONATHON C., *Associate Professor* (History), 1966, 1970. B.A., M.A., Auburn; Ph.D., Florida
- OLLIFF, MARTIN T., *Archivist II, Library*, 1996. B.S., M.A., Auburn
- OLSON, DOUGLAS J., *Professor* (Art), 1968, 1983. B.F.A., Layton Art; M.F.A., Cincinnati
- O'NEILL, MARK A., *Visiting Assistant Professor* (History), 1996. B.A., Auburn M.A., Ph.D., Florida State
- ORGAN, DAVID J., *Assistant Professor* (Geography), 1993, 1995. B.A., M.A., California-Berkeley
- ORGEN, AHMET T., *Professor* (Architecture), 1981, 1992. B.Arch., Istanbul; M.Arch., Virginia
- ORGEN, NEJLA Y., *Associate Director, Special Programs*, 1990, 1993. B.S., Middle E. Tech; M.A., Prague
- OSWALD, SHARON L., *Associate Professor* (Management), 1987, 1989. B.A., Auburn; M.B.A., Ph.D., Alabama
- OWENS, ANTHONY B., *Academic Advisor* (Adm.-Business), 1986, 1995. B.S., Tuskegee; M.Ed., Troy State
- OWENS, JOHN M., *Associate Dean & Professor* (Adm.-Engineering), 1991, 1995. B.S.E.E., California; M.S., Ph.D., Stanford
- OWENS, MELVIN, *Assistant Director, Public Safety*, AU Police Dept., 1981, 1997. B.S., Faulkner
- OWSLEY, LARRY M., *Specialist III, Alumni & Development*, 1974, 1991
- OWSLEY, MICHELE R., *Research Specialist* (Agronomy & Soils), 1990, 1993. B.S., M.S., Texas Tech
- OWSLEY, WALTER F., *Associate Professor* (Animal & Dairy Science), 1990, B.S., M.S., Texas A&M; Ph.D., Texas Tech
- OZLEY, WANDA G., *Specialist II, Purchasing*, 1988, 1992
- PADGETT, MARY LOU, *Senior Research Associate* (Electrical Engineering), 1987, 1995. B.S., M.S., M.S., Auburn
- PAGE, DANIEL E., *Associate Professor* (Finance), 1984, 1987. B.S., B.A., M.B.A., Appalachian State; Ph.D., Georgia
- PALMER, MICHAEL J., *Engineering Associate*, Space Power Institute, 1995
- PALMGREU, GAIL M., *Visiting Assistant Professor* (Clinical Pharmacy), 1996. B.A., B.S., SUNY; Pharm.D., Nova Southeastern
- PANANGALA, VICTOR S., *Professor* (Pathobiology), 1980, 1994. D.V.M., E. Pakistan Ag.; M.S., Guelph; Ph.D., Cornell
- PARISH, EDWARD, *Associate Professor* (Chemistry), 1981, 1988. B.S., SW Texas St; M.A., Houston State; Ph.D. Mississippi State
- PARK, CHAN S., *Professor* (Indust. Engineering), 1980, 1988. B.S., Hanyang; M.S./E., Purdue; Ph.D., Georgia Tech
- PARKER, DAVID R., *Instructor* (English), 1996. B.A., Furman; M.A., Ph.D., North Carolina
- PARKER, FRAZIER, *Professor & Director* (Civil Engineering), 1981, 1995. B.S., Alabama; M.S., Ph.D., Texas
- PARKER, ROBERT M., *Residence Hall Manager, Athletic Department*, 1995. B.S., Montevallo; M.Ed., Jacksonville State
- PARKER, STEPHANIE A., *Senior Academic Advisor* (Nursing), 1988, 1989. R.N., Providence; B.S., Spring Hill; M.Ed., Central Arkansas
- PARKS, PAUL F., *Provost & Vice President for Academic Affairs*, 1965, 1993. B.S., M.S., Auburn; Ph.D., Texas A&M
- PARSONS, DANIEL L., *Professor* (Pharmaceutical Science), 1982, 1991. B.S., Ph.D., Georgia
- PARSONS, GREGORY N., *University Architect, Architect's Office*, 1992. B.A., B.S., Auburn
- PARSONS, LESLIE P., *Development Officer I, Alumni Administration*, 1996. B.S., Auburn
- PARTRIDGE, J. KENT, *Assistant Athletic Director/Media Relations, Athletic Dept.*, 1989, 1994. B.S., West Alabama
- PASCOE, DAVID D., *Associate Professor & Coordinator* (Health & Human Performance), 1990, 1996. B.A., M.A., California State; Ph.D., Ball State
- PATE, MARY J., *Accountant, Risk Management & Property Services*, 1995. B.S., Auburn
- PATE, THOMAS H., *Professor* (Mathematics), 1978, 1988. Ph.D., Emory
- PATHIRANA, SURAM T., *Research Associate, Inst. for Biological Detection Systems*, 1994. B.Sc., Sri Lanka; Ph.D., Auburn
- PATTERSON, GORDON D., *Assistant Professor* (Vocational & Adult Education), 1971. B.S., M.Ed., Auburn; Ph.D., Maryland
- PATTERSON, JAMES E., *Clinical Instructor* (Nursing), 1992, 1994. B.S.N., Auburn
- PATTERSON, KENNETH E., *Supervisor, Utilities*, 1972, 1994
- PATTERSON, MARTHA S., *Assistant to the Dean I* (Adm.-Agriculture), 1990, 1994. B.S., Auburn
- PATTERSON, MICHAEL G., *Professor* (Agronomy & Soils), 1980, 1996. B.S., M.S., Ph.D., Auburn
- PATTERSON, TAMARIA H., *Assistant Director, Financial Information Systems*, 1974, 1988. B.S., M.Ed., Auburn
- PATTILLO, ARNOLD M., *Supervisor, Landscape Services*, 1994
- PAULK, THERESA M., *Flight Instructor II, AU Aviation*, 1993, 1994. B.A.M., M.B.A., Auburn
- PAXTON, MARTHA W., *Clinical Instructor* (Communication Disorders), 1990, 1993. B.S., Miami; M.A., Kent State
- PAXTON, RALPH, *Associate Professor* (Physiology & Pharmacology), 1989. B.A., Miami-Ohio; Ph.D., Cincinnati
- PAYNE, DAVID M., *Assistant Professor* (Animal & Dairy Science), 1990. B.S., Ph.D., N. Texas
- PEARCE, LINDA S., *Director, Financial Information Systems*, 1983, 1993. B.S., Auburn
- PEARCE, WILLIAM G., *Accountant I, Contract & Grants*, 1994. B.S., Auburn
- PEARSON, ROBERT E., *Assistant Dean* (Adm.-Pharmacy), 1978, 1995. B.S., M.S., Illinois
- PEEL, ELIZABETH E., *Advancement Coordinator II, Alumni & Development*, 1984, 1993. B.S., M.Ed., Auburn
- PEENASKOVICH, RICHARD, *Professor* (History), 1984, 1995. B.A., M.A., Wuerzburg; Ph.D., Munich
- PEOPLE, JOE E., *Director, AU Bookstore*, 1981, 1996. B.A., Columbus; M.S., Troy State
- PEPINSKY, PETER R., *Executive Director, University Relations*, 1993. B.A., Auburn
- PEPINSKY, MIRIAM B., *Specialist III, Graduate School*, 1994, 1996
- PEREZ, JOE D., *Professor & Head* (Physics), 1988. B.S., Loyola; Ph.D., Maryland
- PEREZ, KARNI R., *Research Associate* (Agricultural Economics & Rural Sociology), 1993. B.A., San Francisco
- PERRITT, RICHARD W., *Associate Professor* (Geography), 1989, 1994. B.A., American; M.A., Ph.D., Clark
- PERRY, CLIFTON B., *Titled Professor* (Philosophy), 1984, 1995. B.A., Cal State; M.A., Ph.D., California-Berkeley; J.D., Faulkner; L.L.M., Loyola
- PERUSICH, STEPHEN, *Assistant Professor* (Chemical Engineering), 1996
- PETEE, THOMAS A., *Associate Professor* (Sociology), 1989, 1994. B.S., M.A., Toledo; Ph.D., Notre Dame
- PETERS, BRENDA T., *Assistant Professor, Industrial Design*, 1991, 1995. B.IND., M.IND., Auburn
- PETERSON, CURT., *Professor* (Botany-Microbiology), 1971, 1996. B.S., Moorehead State; Ph.D., Oregon
- PETTIT, GREGORY S., *Professor* (Human Development & Family Studies), 1989, 1995. B.S., M.S., Auburn; Ph.D., Indiana U.
- PEYTON, JOHN S., *Senior Research Associate* (Fisheries & Allied Aquacultures), 1992, 1996. B.S., M.S., Southern Mississippi
- PFEIFFER, ROBERT S., *Research Associate* (Physics), 1992, 1995. B.S., Cal Tech; M.S., Ph.D., California-San Diego
- PHELPS, KEVIN T., *Professor & Head* (Discrete & Statistical Sciences), 1987, 1992. B.A., Brown; M.Sc., Ph.D., Auburn
- PHILIPS, RONALD P., *Associate Professor* (Fisheries & Allied Aquacultures), 1975, 1983. B.S., Ph.D., Auburn
- PHILLIPS, AUDREY L., *Academic Counselor II, Athletic Department*, 1996. B.A., B.S., M.S., Jacksonville State
- PHILLIPS, JENNIFER G., *Lead Specialist, Admin. Comp. Services*, 1990, 1992. B.S., Troy State
- PHILLIPS, RANDALL B., *Instructor* (Foreign Language), 1996. B.A., M.A., Auburn; M.I.R., Belgran

Faculty and Staff

- PHILLIPS, ROBERT C., *Lead Specialist*, Telecomm. & ETV, 1990, 1992. B.S., Troy State
- PHILLIPS, THOMAS, *Associate Professor* (Computer Science & Engineering), 1974. B.S., M.S., Mississippi; Ph.D., Oklahoma
- PICKERELL, JACK E., *Director*, Adm. Facilities, 1986. B.S., Butler
- PICKETT, JACQUELINE L., *Assistant Professor* (Music), 1988, 1989. B.A., W. Virginia; M.M., Yale; D.M.A., Wisconsin
- PIERCE, DEBRA, *Instructor* (Curriculum & Teaching), 1996. B.S., South Alabama; M.Ed., Auburn
- PILZ, RONALD C., *Senior Air Transport Pilot*, Auburn University Aviation, 1993. B.S., Embry-Riddle
- PINDZOLA, MICHAEL S., *Titled Professor* (Physics), 1977, 1996. B.A., Univ. of the South; Ph.D., Virginia
- PINDZOLA, REBEKAH H., *Associate Dean* (Adm.-Liberal Arts) & *Professor* (Communication Disorders), 1979, 1993. B.S., M.S., E. Carolina; Ph.D., Tennessee
- PIPES, RANDOLPH B., *Associate Professor* (Counseling & Counseling Psychology), 1977, 1982. B.S., SE Oklahoma; Ph.D., Texas
- PITTARI, JOHN J., *Associate Professor* (Architecture), 1996. B.L.A., Florida; M.V.P., CCNY
- PITTMAN, DAVID W., *Assistant Professor* (Civil Engineering), 1994. B.S.C.E., M.S.C.E., Mississippi State; Ph.D., Texas
- PITTMAN, JESSALYN S., *Health Educator* (Health & Human Performance), 1991, 1992. B.S.Ed., M.Ed., Georgia
- PITTMAN, JOE F., *Associate Professor* (Human Development & Family Studies), 1989. B.S., M.A., Ph.D., Georgia
- PITTMAN, WILLIE R., *Visiting Associate Professor* (Architecture), 1994. B.S., M.Arch., Georgia Tech
- PITTS, CHARLOTTE A., *Dean & Associate Professor* (Nursing), 1986, 1996. B.S.N., Alabama-Birmingham; M.S.N., Med. Col. of Georgia; Ed.D., Auburn
- PLACEK, TIMOTHY D., *Assistant Professor* (Chemical Engineering), 1978. B.S., M.S., Cleveland State; Ph.D., Kentucky
- PLASKETTES, GEORGE M., *Associate Professor* (Communication), 1985, 1991. B.A., M.A., Mississippi; Ph.D., Bowling Green
- PLUMB, JOHN A., *Titled Professor* (Fish & Allied Aquacultures), 1969, 1996. B.A., Bridgewater; M.S., S. Illinois; Ph.D., Auburn
- POLHEMUS, PAUL G., *Aircraft Services Manager*, Auburn University Aviation, 1984, 1993
- PONDER, HARRY G., *Professor* (Horticulture), 1978, 1985. B.S., M.S., Auburn; Ph.D., Michigan State
- POPE, RICHARD, *Manager*, Admin. Computing Svc., 1979, 1983. B.A., Grinnell; M.B.A., Sou. Illinois
- POPMA, THOMAS J., *Associate Professor* (Fisheries & Allied Aquacultures), 1975, 1988. B.S., M.S., Michigan State; Ph.D., Auburn
- PORTER, GAYLE, *Librarian II*, Library, 1992. B.A., M.L.I.S., Brigham Young
- POTTER, MARY A., *Assistant Professor* (Consumer Affairs), 1969, B.S., Ga. Southern; M.H.E., Georgia; Ed.D., Auburn
- POWE, THOMAS A., *Professor* (Large Animal Surgery & Medicine), 1972, 1993. D.V.M., Auburn; M.S., Tuskegee
- POWELL, ARLIE A., *Professor* (Horticulture), 1978. B.S.A., M.S.A., Ph.D., Florida
- POWELL, FRANCIS M., *Staff Physician*, Student Health Ctr., 1989. B.S., Auburn; M.D., Alabama-Birmingham
- POZIN, ALLA V., *Specialist II*, Alumni & Development, 1991. M.S., Pedagogical Institute
- POZIN, MIKHAIL A., *Assistant Professor* (Foreign Languages & Literatures), 1990. M.S., Inst. Chem. Tech; M.A., Auburn; Ph.D., Illinois
- PRANGE, LAURA, *Assistant Professor* (Architecture), 1990. B.A., North Carolina; M.F.A., Cranbrook Academy
- PRATHER, MARY H., *Assistant Manager*, Personnel Services, 1987, 1995. B.S., Auburn; M.S., Troy State
- PRATHER, MELISSA H., *Accountant III*, Financial Reporting, 1988, 1993. B.S., Troy State
- PRATT, JOHN, *Assistant Professor* (Architecture), 1989. B.A., Windsor; M.A., Cornell
- PRESLEY, ANN B., *Assistant Professor* (Consumer Affairs), 1992. B.S., W. Kentucky; M.S., Ohio State; Ph.D., Maryland
- PREVATT, JAMES W., *Professor* (Agricultural Economics & Rural Sociology), 1991, 1996. B.S., M.S., Florida; Ph.D., Clemson
- PRICE, CHARLES E., *Associate Professor* (Accountancy), 1987, 1993. B.B.A., M.B.A., Auburn; Ph.D., Georgia
- PRICE, KELLY G., *Engineer* (Computer Science & Engineer), 1992, 1993. B.S., M.S.C.E., Auburn
- PRICE, MARK S., *Professor* (Art), 1976, 1992. B.F.A., M.F.A., Illinois
- PRICE, STUART B., *Associate Professor* (Pathobiology), 1990, 1996. B.S., Oklahoma State; Ph.D., Oklahoma
- PRIOR, JUDITH A., *Laboratory Supervisor* (Botany-Microbiology), 1989, 1991. B.S., Purdue; M.S., North Carolina State
- PRITCHETT, JOHN F., *Associate Vice President & Dean of the Graduate School*, 1973, 1995. B.S., M.S., Auburn; Ph.D., Iowa State
- PUGH, DAVID G., *Associate Professor* (Large Animal Surgery & Medicine), 1990, 1995. B.S., M.S., D.V.M., Georgia
- PUGH, WILLIAM, *Associate Professor* (Finance), 1986, 1992. B.S., Auburn; M.S., Ph.D., Florida State
- PUROHIT, RAM C., *Titled Professor* (Large Animal Surgery & Medicine), 1971, 1995. B.V.S., Rajasthan; Ph.D., Auburn
- PURVES, LUCY L., *Instructor* (Consumer Affairs), 1996. B.A., Auburn
- PYLANT, KENNETH D., *Director*, Alumni & Development, 1974, 1987. B.A., M.B.A., Auburn
- PYRON, CHRISTOPHER, *Instructor* (Architecture), 1995. B.A., Auburn
- QIU, JIANSHENG, *Research Assistant* (Plant Pathology), 1992, 1995. B.S., Xiamen; M.S., Ph.D., Auburn
- QUINN, DARBY M., *Research Specialist* (Horticulture), 1995. B.S., Auburn
- QUINTON, KAREN L., *Specialist III* (Large Animal Surgery & Medicine), 1989, 1993. B.S., Troy State
- RABREN, KAREN, *Coordinator* (Rehabilitation & Special Education), 1994. B.S., Auburn-Montgomery; M.Ed., Ph.D., Auburn
- RABY, MICHEL J., *Associate Professor* (Foreign Languages & Literatures), 1989, 1995. B.A., Paris; M.A., Ph.D., Iowa
- RAHE, CHARLES H., *Associate Professor* (Animal & Dairy Science), 1980, 1989. B.S., Tarleton State; M.S., Ph.D., Texas A&M
- RAINER, REX K., *Associate Professor* (Management), 1988, 1989. B.S., Auburn; D.M.D., Alabama-Birmingham
- RAJU, POLAPRAGADA K., *Professor* (Mechanical Engineering), 1984, 1994. B.S., India; M.S., Madras; Ph.D., Indian Inst. Tech
- RAMEY, CATHERINE F., *Specialist II*, University Computing, 1985, 1996. B.A., Auburn
- RAMEY, GEORGE E., *Feagin Professor* (Civil Engineering), 1971, 1992. B.C.E., M.S.C.E., Auburn; Ph.D., Colorado
- RAMEY, ROBERT W., *Assistant Manager*, Food Services, 1990. B.S., Auburn
- RANKIN, KAREN M., *Coordinator*, Outreach Info. & Marketing, 1990, 1994. B.A., Valdosta State; M.S., Auburn
- RANKINS, DARRRELL, *Associate Professor* (Animal & Dairy Science), 1989, 1994. B.S., Illinois; M.S., Ph.D., New Mexico State
- RANSEL, KERRY A., *Personnel Specialist*, Library, 1990. B.A., Xavier; M.S., Ohio State
- RAO, SADASIVA, *Professor* (Electrical Engineering), 1988, 1992. B.E., Osmania; M.S., Indian Inst. Science; Ph.D., Mississippi
- RAPER, CHARLES F., *Peake Professor* (Forestry), 1988. B.S., North Carolina State; M.B.A., J.D., Connecticut
- RASCH, RONALD H., *Associate Professor* (Accountancy), 1993. B.S., Kansas State; M.S., Air Force Inst.; Ph.D., Texas
- RAVIS, WILLIAM R., *Professor & Head* (Pharmaceutical Science), 1977, 1990. B.S., Temple; Ph.D., Houston
- RAY, CHARLES H., *Director*, Environ. Health, 1982, 1986. B.S., Florida State; M.S., Ph.D., Auburn
- RAYMOND, JENNIE E., *Associate Professor* (Management), 1989, 1994. B.A., Hendrix; Ph.D., Vanderbilt
- REED, VILLE D., *Research Specialist* (Animal & Dairy Sciences), 1990, 1994. B.S., Auburn
- REESE, BETTY C., *Manager* (Adm.-Engineering), 1973, 1994. B.S., Alabama A&M
- REESE, JOHN L., *Supervisor*, Housing & Residence Life, 1989, 1995
- REESE, THOMAS W., *Supervisor*, Facilities, 1985, 1987

Faculty and Staff

- REEVE, T. GILMOUR, *Alumni Professor* (Health & Human Performance), 1977, 1993. B.S., M.Ed., Texas Tech; Ph.D., Texas A&M
- REEVES, CLAUDE E., *Aquaculturist* (Fisheries & Allied Aquacultures), 1995. B.S., M.B.A., Columbus Col.; M.A., Auburn
- REEVES, SHARON K., *Instructor* (Curriculum & Teaching), 1994. B.S., M.Ed., Georgia Southwestern
- REEVES, STANLEY J., *Associate Professor* (Electrical Engineering), 1990, 1995. B.S., M.S., Clemson; Ph.D., Georgia Tech
- REGAN, J. THOMAS, *Dean & Professor* (Adm.-Architecture), 1994. B.Arch., Auburn; J.Dip., Arch. Assc. Grad. (London)
- REID, GWENDOLYN F., *Advancement Officer I*, Alumni & Development, 1986, 1991. B.A., Ohio; B.S., M.S., Auburn
- REILLY, AMYSUE, *Assistant Professor* (Rehabilitation & Special Education), 1993. B.S., Eastern Kentucky; M.S., Indiana; M.A. Ph.D., New Mexico
- REINKE, C. MICHAEL, *Associate Professor* (Clinical Pharmacy), 1985, 1991. B.A., Jamestown; B.S., M.S., Pharm.D., Michigan
- RELIHAN, CONSTANCE, *Associate Professor* (English), 1990, 1994. A.B., Illinois; M.A., Ph.D., Minnesota
- RENDEN, JOSEF A., *Professor* (Poultry Science), 1981, 1990. B.S., M.S., Ph.D., California
- REUTEBUCH, ERIC M., *Senior Research Associate* (Fisheries & Allied Aquacultures), 1989, 1993. B.S., Purdue; M.S., Auburn
- REYNOLDS, ANNA R., *Laboratory Supervisor*, Agronomy & Soils, 1980, 1993. B.S., Virginia Commonwealth; M.S., Auburn
- REYNOLDS, GEORGE W., *Assistant Director*, Cooperative Education, 1981, 1993. B.A., M.Ed., Auburn
- REY, RICHELLE W., *Instructor* (Rehabilitation & Special Education), 1987, 1992. B.S., M.C.D., Auburn
- RICHARDSON, ANNE S., *Supervisor*, Accounts Payable, 1981, 1988.
- RICHARDSON, GEORGE, *Assistant Radiologist*, Safety Officer, Environ. Health, 1989. B.S., Auburn
- RIDDELL, KAY P., *Research Associate* (Pathobiology), 1984. M.S., D.V.M., Auburn
- RIDDELL, M. GATZ, *Professor* (Large Animal Surgery & Medicine), 1984, 1996. B.S., D.V.M., Kansas State; M.S., Auburn
- RIDGWAY, JAMES W., *Media Services Manager* (Adm.-Engineering), 1979, 1990. B.A., M.Ed., Auburn
- RIGGS, LLOYD S., *Associate Professor* (Electrical Engineering), 1983, 1990. B.S., M.S., Ph.D., Auburn
- RIKARD, FRANK S., *Senior Research Associate* (Fisheries & Allied Aquacultures), 1991, 1996. B.S., M.S., Auburn
- RILEY, THOMAS N., *Professor* (Pharmacal Science), 1982, 1992. B.S., Kentucky; Ph.D., Minnesota
- RIPLEY, ROBERT F., *Associate Professor* (Aerospace Engineering), 1990, 1996. B.A., Bowling Green; M.Ed., Mid. Tennessee State
- RITENBAUGH, CHARLOT, *Extension Program Associate* (Rehabilitation & Special Education), 1993. B.S., Penn State; M.A.T., Connecticut Col.
- RITENBAUGH, ROBERT C., *Director*, Auxiliary Enterprises, 1993. B.A., M.B.A., Penn State
- ROBBINS, EFREM, *Research Specialist* (Forestry), 1988. B.S. Virginia State
- ROBEL, LINDA J., *Accountant II*, Auburn Conference Center, 1991, 1994. B.S., Auburn
- ROBERTS, CHRISTOPHER R., *Assistant Professor* (Chemical Engineering), 1994. B.S., Missouri; M.S., Ph.D., Notre Dame
- ROBERTS, ROBBIE, *Assistant Director* (Human Development & Family Studies), 1995. B.S., Auburn; M.A., Ph.D., Alabama-Birmingham
- ROBERTS, SHARON R., *Assistant Professor* (Botany-Microbiology), 1996. B.A., M.P.H., Ph.D., California
- ROBERTSON, BARRY A., *Manager*, University Printing Service, 1984, 1995.
- ROBERTSON, DAVID G., *Senior Research Associate* (Plant Pathology), 1981, 1992. B.S., Tennessee
- ROBICHEAUX, FRANCIS J., *Assistant Professor* (Physics), 1993. B.A., M.S., Ph.D., Chicago
- ROBINSON, AMY G., *Instructor* (Curriculum & Teaching), 1995. B.S., M.Ed., Auburn
- ROBINSON, DAVID, *Supervisor*, AU Bookstore, 1992, 1996. B.S., Auburn
- ROBINSON, DINAH A., *Assistant Professor* (Political Science), 1993.
- ROBINSON, DYANN, *Associate Professor* (Theatre), 1987, 1995. B.A., Butler; M.A., Catholic
- ROBINSON, JACQUELYN, Ext. *Specialist & Associate Professor* (Cooperative Extension), 1988, 1995. B.S., Montevallo; M.Ed., Livingston; Ed.D., Alabama
- ROBINSON, JANICE M. J., *Academic Counselor II*, Athletic Department, 1994, 1996. B.S.N., W. Tennessee State; M.Ed., Tuskegee
- ROBINSON, LAURIE K., *Senior Academic Advisor* (Adm.-Pharmacy), 1992, 1995. B.S., Auburn
- ROBINSON, MICHAEL K., *Assistant Director*, Internal Auditing, 1989, 1994. B.S., M.Ac., Auburn
- ROBINSON, P. MICHAEL, *Professor & Head* (Architecture), 1996. B.Arch., Kentucky; M.L.A., Harvard
- ROBINSON, WILLIE B., *Film Lab. Manager*, Telecom. & ETV, 1976, 1984.
- RODEN, REBECCA H., *Assistant Dean* (Graduate School), 1956, 1994. B.S., Auburn
- RODGER, CHRISTOPHER A., *Alumni Professor* (Discrete & Statistical Sciences), 1982, 1990. B.S., M.S., Sydney; Ph.D., Reading
- RODRIGUEZ-KABANA, RODRIGO, *Distinguished University Professor* (Plant Pathology), 1965, 1995. B.S., M.S., Ph.D., LSU
- ROGERS, HUGO H., *Professor*, USDA Tillage Lab., 1984. B.S., M.S., Auburn; Ph.D., North Carolina
- ROGERS, JACK W., *Professor* (Mathematics), 1973, 1982. B.A., M.A., Ph.D., Texas
- ROGERS, JANET S., *Instructor* (Mathematics), 1983, 1988. B.A., Texas; M.S., Auburn
- ROLAND, DAVID A., *Distinguished University Professor* (Poultry Science), 1976, 1991. B.S., Ph.D., Georgia
- ROLLER, DAVID C., *Lead Specialist*, Univ. Comp. Svc., 1989, 1992. B.S., Auburn
- ROLSMA, MARK D., *Assistant Professor* (Pathobiology), 1995. B.S., M.S., Michigan State; Ph.D., Illinois
- ROOS, C. WILLIAM, *Associate Professor* (Chemical Engineering), 1983. B.S., M.S., D.Sc., Washington U.
- ROPPEL, THADDEUS A., *Associate Professor* (Electrical Engineering), 1986, 1992. B.S., M.S., Ph.D., Michigan State
- ROSE, M. FRANK, *Director & Professor* (Space Power Inst.), 1985. B.A., Virginia; M.S., Ph.D., Penn State
- ROSENBLATT, DAVID J., *Archivist II*, Library, 1976, 1991. B.A., M.A., Missouri
- ROSENTHAL, DAN, *Associate Director*, Planning & Analysis, 1994. B.A., Brooklyn; Ph.D., Pittsburgh
- ROSS, CONRAD H., *Professor* (Art), 1963, 1983. B.F.A., Illinois; M.F.A., Iowa
- ROTFELD, HERBERT J., *Professor* (Marketing & Transportation), 1988, 1995. B.S., M.S., Ph.D., Illinois
- ROTHSCHILD, JOYCE M., *Assistant Professor* (English), 1981, 1983. B.A., Rutgers; M.A., Ph.D., Maryland
- ROUSE, DAVID B., *Professor* (Fisheries & Allied Aquacultures), 1981, 1995. B.S., M.S., Auburn; Ph.D., Texas A&M
- ROWSEY, ROBERT E., *Assistant Dean & Professor* (Adm.-Education), 1973, 1990. A.B., M.S., Marshall; Ed.D., Auburn
- ROYAL, DONALD T., Exec. *Director*, Internal Auditing, 1973. B.S., Auburn
- ROYSTER, BARBARA H., *Manager*, University Computing, 1981, 1989. B.S., Auburn
- RUDISILL, MARY E., *Associate Professor* (Health & Human Performance), 1996. B.S., M.A., Appalachian State; Ph.D., Florida State
- RUFF, ROSEMARY H., *Assistant Director*, Contracts & Grants Administration, 1996. B.S., West Virginia
- RUFFIN, DEBRA C., *Assistant Professor* (Large Animal Surgery & Medicine), 1995. D.V.M., Auburn
- RUMPH, PAUL F., *Professor* (Anatomy & Histology), 1971. M.S., D.V.M., Auburn
- RUSCIN, JOSEPH M., *Instructor* (Architecture), 1994. B.A., Texas Tech; M.C.P., Auburn

Faculty and Staff

- RUSH, ROBERT H., *Manager-Arboretum* (Botany-Microbiology), 1984, 1987. B.A., Alabama; B.S., Auburn
- RUSSELL, LAVERN, *Coordinator*, Student Health Ctr., 1982, 1989. B.A., Florida; M.Ed., Ph.D., Georgia
- RUTH, DENNIS K., *Professor* (Architecture), 1989, 1994. B.Arch., Auburn; M.Arch., Harvard
- RUTH, LINDA, *Instructor* (Building Science), 1996. B.Arch., Tennessee
- RYAN, FRANK X., *Instructor* (Philosophy), 1991. B.S., Colorado; B.A., Sou. Colorado; M.A., Emory
- RYDER, STEPHEN D., *Instructor* (Political Science), 1996.
- RYGIEL, DENNIS, *Professor & Head* (English), 1972, 1990. B.A., M.A., Loyola; Ph.D., Cornell
- RYNDERS, PATRICIA E., *Research Associate* (Small Animal Surgery & Medicine), 1995. B.S., D.V.M., North Carolina State
- SABA, RICHARD P., *Associate Professor* (Economics), 1974, 1988. B.A., M.B.A., Dallas; Ph.D., Texas A&M
- SABINO, ROBIN, *Associate Professor* (English), 1991, 1996. A.B., Adelphi; M.A., Virgin Islands; Ph.D., Pennsylvania
- SACK, CATHARINA R., *Assistant Professor* (Architecture), 1994. B.L.A., M.L.A., Iowa State
- SAIDLA, MARY L., *Assistant Director*, Student Financial Aid, 1991. B.A., Auburn; M.A., Scariff
- SALTS, CONNIE J., *Professor* (Human Development & Family Studies), 1985, 1996. B.S., Ohio State; M.A., Kent State; Ph.D., Florida State
- SAMPSON, GARY M., *Professor* (Mathematics), 1985, 1991. B.A., M.A., Temple; Ph.D., Syracuse
- SAMUELSON, LISA J., *Assistant Professor* (Forestry), 1994. B.S., M.S., Georgia; Ph.D., Virginia Tech
- SANDERS, LAURA G., *Research Associate* (Discrete & Statistical Science), 1994. B.S., Troy St.; M.P.S., Auburn
- SANDERS, STEPHEN W., *Assistant Professor* (Health & Human Performance), 1993. B.P.E., Purdue; M.Ed., Georgia; Ed.D., Virginia Tech
- SANDERS, THOMAS R., *Librarian III & Head*, Library, 1983, 1992. B.A., Ohio Wesleyan; M.A., Harvard; M.L.S., Simmons
- SANDERS, VICKY L., *Instructor* (Curriculum & Teaching), 1994. B.S., Wisconsin; M.Ed., Georgia State
- SANDLIN, WENDELL L., *Glass Designer* (Chemistry), 1990.
- SANFORD, MARILYN, *Assistant Director*, Purchasing, 1969, 1985.
- SANKAR, CHETAN, *Professor* (Management), 1989, 1996. B.S., M.B.A., Indian Inst.; Ph.D., Pennsylvania
- SARATHY, PARTHA K., *Manager* (Chemistry), 1984. B.S., M.S., Ph.D., Madras
- SARTIN, EVA A., *Associate Professor* (Pathobiology), 1982, 1996. B.S., M.S., D.V.M., Oklahoma State; Ph.D., Auburn
- SARTIN, JAMES L., *Professor* (Physiology & Pharmacology), 1982, 1992. B.A., M.S., Auburn; Ph.D., Oklahoma State
- SASSER, JAMES, *Instructor* (Educational Foundations, Leadership & Technology), 1996. B.S., M.A., Auburn
- SAUNDERS, JAMES A., *Professor* (Geology), 1991, 1996. B.S., Auburn; M.S., Georgia; Ph.D., Colorado Sch. of Mines
- SAUSER, LANE D., *Assistant Director*, Center for Governmental Services, 1988, 1993. B.B.A., Georgia State
- SAUSER, WILLIAM I., *Director & Professor* (Adm.-Business), 1977, 1995. B.S., M.S., Ph.D., Georgia Tech
- SAVAGE, CHERYL M., *Clinical Instructor* (Nursing), 1996. B.S.N., Troy State
- SAVRDA, CHARLES E., *Professor* (Geology), 1986, 1996. B.A., Rutgers; M.S., Ph.D., Southern California
- SAYE, JOHN W., *Assistant Professor* (Curriculum & Teaching), 1994. B.A., M.A., Ed.D., Georgia
- SAYERS, LEIGH C., *Clinical Instructor* (Communication Disorders), 1993. B.S., M.S., Auburn
- SAYERS, LINDA D., *Director*, Alumni & Development, 1993. B.S., Auburn
- SCARDINO, M. STACIE, *Research Associate*, Ritchey Research, 1994. D.V.M., Auburn
- SCHADLER, BRENDA B., *Administrative Assistant III* (Mechanical Engineering), 1980, 1994.
- SCHAEFFER, ROBERT W., *Professor* (Psychology), 1971. A.B., Franklin & Marshall; M.A., Ph.D., Missouri
- SCHAEFER, ROBERT L., *Adjunct Professor* (Tillage Lab.), 1982. B.S., M.S., Ph.D., Iowa State
- SCHMIDT, PAUL G., *Associate Professor* (Mathematics), 1989, 1994. B.S., M.S., Ph.D., Tech Univ. Aachen
- SCHMIDT, STEPHEN P., *Professor* (Animal & Dairy Science), 1976, 1992. B.S., Idaho; M.S., Ph.D., Wisconsin
- SCHMITZ, CECILIA, *Librarian III*, Library, 1988, 1994. B.A., M.L.S., Arizona
- SCHNEIDER, TODD A., *Research Assistant* (Physics), 1988, 1991. B.S., Auburn
- SCHNELLER, AINA N., *Instructor* (English), 1996. B.A., Louisville; M.A., Massachusetts
- SCHNELLER, STEWART W., *Dean of Sciences & Mathematics, and Associate Director*, Agricultural Experiment Station, 1994, 1997. B.S., M.S., Louisville; Ph.D., Indiana U.
- SCHUMACHER, JOHN, *Professor* (Large An. Sur. & Med.), 1982, 1996. M.S., Texas A&M; D.V.M., Kansas State
- SCHUMACHER, SHERI L., *Associate Professor* (Architecture), 1986, 1991. B.A., Auburn; M.F.A., Cranbrook Academy
- SCHUYLER, CAROLE A., *Instructor* (English), 1995. B.A., SUNY; M.A., M.Ed., Virginia; M.S., Rensselaer
- SCHWARTZ, DEAN D., *Assistant Professor* (Physiology & Pharmacology), 1993. B.S., Stonehill; Ph.D., Houston
- SCHWINDLER, MARGARET M., *Instructor* (English), 1994. B.A., M.A., Auburn
- SCOGAN, TESS C., *Instructor* (English), 1994. B.A., M.A., Mississippi; M.F.A., Arkansas
- SEARCY, STEPHANIE, *Specialist*, Student Financial Aid, 1992, 1994. B.A., Auburn
- SEARS, STEPHEN, *Assistant Professor* (Military Science), 1994. B.S., Jacksonville State
- SEAY, LINDA R., *Academic Advisor* (Adm.-Liberal Arts), 1993. B.S., M.S., Auburn
- SEESOCK, WENDY C., *Senior Research Associate* (Fisheries & Allied Aquacultures), 1980. B.S., M.S., Auburn
- SEIBENHNER, MICHAEL L., *Laboratory Supervisor* (Zoology-Wildlife Science), 1990, 1993. B.S., M.S., Auburn
- SENGER, ELIZABETH S., *Assistant Professor* (Curriculum and Teaching), 1996. B.A., Marillac; M.Ed., Central Florida; Ph.D., Arizona
- SETZER, FRANKLIN M., *Associate Professor* (Architecture), 1990, 1994. B.Arch., Florida; M.Arch., Rice
- SEXTON, ROBERT, *Supervisor*, Facilities, 1975, 1984.
- SHAFFER, SCOTT M., *Associate Professor* (Management), 1994, 1995. B.S., B.B.A., Ph.D., Cincinnati
- SHANLEY, LISA A., *Associate Professor* (Consumer Affairs), 1987, 1992. B.S., E. Illinois; M.S., Illinois State; Ph.D., Oklahoma State
- SHANLEY, PAUL S., *Research Assistant* (Consumer Affairs), 1991. B.S., Auburn
- SHANNON, CURTIS G., *Assistant Professor* (Chemistry), 1991. B.S., California State; Ph.D., Texas
- SHANNON, DAVID M., *Associate Professor* (Educational Foundations, Leadership & Technology), 1990, 1995. B.S., Kutztown; Ph.D., Virginia
- SHANNON, DENNIS A., *Associate Professor* (Agronomy & Soils), 1990, 1996. B.A., Goshen; B.Sc., McGill; M.S., Ph.D., Cornell
- SHAPIRO, STEVEN K., *Associate Professor* (Psychology), 1990, 1995. B.A., Rhode Island; Ph.D., Miami
- SHARPE, DEBRA C., *University Safety Officer*, Environmental Health, 1996. B.S., St. Mary's
- SHARPE, RACHEL R., *Research Assistant* (Agronomy & Soils), 1992, 1993. B.S., M.S., Auburn
- SHARPE, SHARRON L., *Outreach Program Advisor*, Center for Governmental Services, 1985, 1994.
- SHARPLESS, KAREN L., *Development Officer II*, Alumni Administration, 1981, 1996. B.A., Virginia Tech; M.A., Auburn
- SHAW, JOE J., *Associate Professor* (Botany-Microbiology), 1988, 1993. B.A., Cal.-Santa Barbara; Ph.D., Cal.-Davis
- SHAW, SUZANNE, *Academic Advisor* (Adm.-Sciences & Mathematics), 1988, 1990. B.S., Auburn
- SHAW, WILLIAM L., *Chief Engineer*, Telecom. & ETV, 1984, 1996. B.A., Auburn

Faculty and Staff

- SHEDIVY, JOAN M., *Librarian II*, Library 1996.
- SHEN, WENXIAN, *Assistant Professor* (Mathematics), 1992. B.A., Zhejiang Normal; M.S., Beijing; Ph.D., Georgia Tech
- SHEPPARD, JUDITH E., *Assistant Professor* (Journalism), 1993. B.S., M.A., Auburn
- SHEVLIN, PHILIP B., *Professor* (Chemistry), 1970, 1982. B.S., Lafayette; M.S., Ph.D., Yale
- SHUMACK, RONALD, *Associate Dean & Professor* (Adm.-Agriculture), 1963, 1993. B.S., M.A., Auburn; Ph.D., Michigan State
- SHUMAKER, LINDA P., *Coordinator* (Rehabilitation & Special Education), 1995. B.S., M.A., Jacksonville State
- SHUMPERT, THOMAS H., *Professor* (Electrical Engineering), 1974, 1982. B.S.E.E., M.S.E.E., Ph.D., Mississippi State
- SIBLEY, JEFFREY L., *Instructor* (Horticulture), 1994, 1996. B.S., M.S., Auburn
- SIGNER, DENNIS A., *Professor* (Mechanical Engineering), 1984, 1994. B.S., M.S., Sc.D., Istanbul; Ph.D., Minnesota
- SIKORA, EDWARD J., *Associate Professor* (Plant Pathology), 1992, 1996. B.S., E. Illinois; M.S., Ph.D., Illinois-Urbana
- SILBERBERG, SUSAN C., *Instructor* (Architecture), 1991. B.Arch., Pratt
- SILVERN, LINDA, *Instructor* (Human Development & Family Studies), 1987. B.A., Maryland; M.Ed., Auburn
- SILVERN, STEVEN B., *Professor* (Curriculum & Teaching), 1978, 1989. B.S., Ed.D., Maryland; Ph.D., Wisconsin
- SILVERSTEIN, MARC R., *Associate Professor* (English), 1989, 1994. B.A., Bowdoin; M.A., Ph.D., Brown
- SIMMS, JOHN T., *Laboratory Manager* (Geology), 1992. B.S., Auburn
- SIMON, MARLLIN L., *Associate Professor* (Physics), 1972. B.A., M.S., Kansas; M.S. Michigan State; Ph.D., Missouri
- SIMON, MARY D., *Instructor* (Curriculum & Teaching), 1994. B.A., Florida; M.A., Florida State; Ed.D., Auburn
- SIMONTON, R. LESLIE, *Computer Systems Engineer* (Electrical Engineering), 1985. B.E.E., M.S.E.E., Auburn
- SIMONNE, ERIC, *Assistant Professor* (Horticulture), 1994, 1996. M.S., Ensat; Ph.D., Georgia
- SIMPSON, EUGENE H., *Extension Head, Computer Technology*, 1983, 1996. B.S., Ph.D., Mississippi State
- SIMPSON, ROBERT G., *Professor* (Rehabilitation & Special Education), 1979, 1988. B.A., Vanderbilt; M.A., Kentucky; Ph.D., Florida
- SIMPSON, STEPHEN T., *Associate Professor* (Small Animal Surgery & Medicine), 1982, 1984. D.V.M., Auburn; M.S., Purdue
- SINGH, ADIT D., *Associate Professor* (Electrical Engineering), 1991. B.S., Indian Inst.; M.S., Ph.D., Virginia Tech
- SINGH, NARENDRA, *Professor* (Botany-Microbiology), 1989, 1995. B.Sc., M.Sc., Patna-India; Ph.D., Bombay
- SINHA, ANUPAMA, *Research Specialist* (Nutrition & Food Science), 1996. B.S., Bararas; M.S., Tuskegee
- SINHA, SUBHASH C., *Professor* (Mechanical Engineering), 1987, 1993. Bihar Inst.; M.S., Inst. of Sci.-India; Ph.D., Wayne State
- SINNARAJAH, SRIKUMAR, *Manager* (Chemistry), 1991. B.S., Xavier; M.S., Auburn
- SISSON, D. CLAY, *Research Associate* (Zoology-Wildlife Science), 1993. B.S., Georgia; M.S., Auburn
- SKLADANY, MICHAEL A., *Research Associate* (Agricultural Economics & Rural Sociology), 1994. B.Sc., Tennessee; M.Sc., Auburn; Ph.D., Michigan State
- SLADDEN, SUSAN E., *Research Specialist* (Agronomy & Soils), 1986, 1990. B.S., Florida; M.S., Penn State
- SLAMINKA, EDWARD E., *Associate Professor* (Mathematics), 1985, 1991. B.S., Case Western; M.S., Ph.D., Michigan
- SLATER, BETH T., *Development Coordinator II, Alumni Administration*, 1996. B.A., Mary Baldwin; M.S., North Carolina
- SLATON, CHRISTA D., *Associate Professor* (Political Science), 1993, 1996. B.S., Tennessee-Nashville; M.S., Hawaii
- SLICK, JANINE M., *Manager* (Adm.-Agriculture), 1987, 1995. B.S., N. Arizona; M.S., Troy State
- SLIPKE, JEFFREY W., *Research Associate* (Fisheries & Allied Aquacultures), 1996. B.S., Iowa State; M.S., South Dakota State
- SMITH-CARR, SARALYN, *Associate Professor* (Small Animal Surgery & Medicine), 1994. B.S., D.V.M., Tuskegee; M.S., Ph.D., Washington State
- SMITH, ANN T., *Director* (Adm.-Education), 1995. B.A., Samford; M.A., Troy State; A.D.V., Auburn-Montgomery
- SMITH, BILLY L., *Building Services Manager*, Facilities, 1989, 1996.
- SMITH, BRET H., *Associate Professor* (Industrial Des.), 1985, 1990. B.S./Ed. M.A., M.A., Purdue
- SMITH, BRIDGET F., *Visiting Assistant Professor* (Psychology), 1995. B.A., M.S., Ph.D., Auburn
- SMITH, BRUCE F., *Assistant Professor, Ritchey Research*, 1993. B.A., Havelord; V.M.D., Ph.D., Pennsylvania
- SMITH, DAVID M., *Librarian III & Head, Library*, 1969, 1992. A.B., Huntingdon; M.L.S., Emory
- SMITH, ELIZABETH L., *Research Associate* (Human Development & Family Studies), 1994. M.S., Auburn
- SMITH, ELIZABETH O., *Assistant Professor* (English), 1993, 1995. B.S., Delaware; M.Ed., Northwestern; Ph.D., Texas Tech
- SMITH, EMILY C., *Instructor* (Curriculum & Teaching), 1996.
- SMITH, FORREST, *Associate Professor* (Pharmaceutical Science), 1987, 1992. B.S., Virginia Tech; Ph.D., Virginia Commonwealth
- SMITH, G. ROBERT, *Assistant Professor* (Accountancy), 1993, 1994. B.S.B.A., M.C.A.A., Tennessee; Ph.D., Texas Tech
- SMITH, JAMES W., *Assistant Professor* (Marketing & Transportation), 1968. B.S., Athens State; J.D., Samford
- SMITH, JESSIE J., *Supervisor, Facilities*, 1978, 1984.
- SMITH, KIMBERLY A., *Assistant Professor* (Aerospace Studies), 1993. B.S., Washington Univ.; M.S., Troy State
- SMITH, LARRY K., *Lead Systems Programmer, University Computing Services*, 1983. B.S., Auburn
- SMITH, LARRY P., *Design Services Coordinator, Architect's Office*, 1991. B.Arch., Texas
- SMITH, LEO A., *Professor* (Industrial Engineering), 1969, 1984. B.I.E., M.S.I.E., Georgia Tech; Ph.D., Purdue
- SMITH, MARCIE C., *Controller, Controller*, 1985, 1992. B.S., Alabama; B.B.A., N. Florida
- SMITH, MARY L., *Administrative Assistant III* (Fisheries & Allied Aquacultures), 1979, 1991.
- SMITH, MELVIN K., *Counselor, Student Development Services*, 1989. B.S., Auburn
- SMITH, MICHEL, *Professor* (Mathematics), 1974, 1993. B.A., Texas; Ph.D., Emory
- SMITH, MICHELLE D., *Pharmacist* (Adm.-Pharmacy), 1996. B.S., New Mexico
- SMITH, RICHARD W., *Advisor* (Communication), 1992, 1994. B.A., South Carolina; M.S.C., M.Ed., Auburn
- SMITH, ROBERT C., *Professor* (Animal & Dairy Sciences), 1996. B.S., Elmhurst; M.S., Ph.D., Illinois
- SMITH, ROBERT E., *Professor & Head* (Clinical Pharmacy), 1996. B.A., Arizona State; PharmD., Southern California
- SMITH, RODNEY T., *Titled Professor* (English), 1976, 1995. B.A., North Carolina; M.A., Appalachian State
- SMITH, RONALD H., *Professor* (Entomology), 1972, 1988. B.S., M.S., Ph.D., Auburn
- SMITH, SARAH H., *Specialist, Student Financial Aid*, 1994. B.A., Georgia State
- SMITH, STEPHEN T., *Assistant Professor* (Clinical Pharmacy), 1993. B.S., D.Pharm., Florida
- SMITH, SUSAN O., *Specialist, Controller*, 1984, 1988. B.S., Southern Mississippi; B.S., Auburn
- SMITH, THOMAS A., *Associate Professor* (Human Development & Family Studies), 1985, 1991. B.S., M.A., Alabama; M.S., Auburn; Ph.D., Virginia Tech
- SMITH, THOMAS L., *Assistant Professor* (Aerospace Studies), 1995. B.S., Auburn; M.S., Florida Inst. of Technology
- SMITH, THOMAS R., *Professor & Director* (Music), 1972, 1984. B.M., Samford; M.A., Iowa; D.M.A., Colorado
- SMITH, TROY D., *Academic Counselor I, Athletic Department*, 1996. B.S., Jacksonville State
- SMITH, WILLIAM G., *Associate Professor & Associate Director* (Coop. Ext.), 1965, 1997. B.S., M.Ag., Ed.D., Auburn
- SNIPES, ALBERT L., *Manager, Personnel Services*, 1972, 1987. B.S., Alabama A&M; M.S., Troy State

Faculty and Staff

- SNYDER, CHARLES A., *Professor* (Management), 1978, 1994. B.F.A., Georgia; M.S., South Dakota State; M.B.A., Ohio State; Ph.D., Nebraska
- SOKOLOVA, YANA O., *Research Associate* (Mechanical Engineering), 1993. M.A., St. Petersburg
- SOLHEIM, CATHERINE A., *Associate Professor* (Human Development & Family Studies), 1990, 1996. B.S., M.S., Ph.D., Minnesota
- SOLLIE, DONNA L., *Professor* (Human Development & Family Studies), 1986, 1993. B.S., Mississippi State; M.S., Kentucky; Ph.D., Tennessee
- SOLOMON, HARRY M., *Holifield Professor* (English), 1971, 1984. B.A., S.F. Austin; M.A., Ph.D., Duke
- SOLOMON, MICHAEL R., *Professor* (Consumer Affairs), 1995. B.A., Brandeis; M.A., Ph.D., North Carolina
- SOMERS, GREG L., *Associate Professor* (Forestry), 1987, 1992. B.S., Oklahoma State; M.S., M.S., Ph.D., Virginia Tech
- SORJONEN, DONALD C., *Professor* (Small Animal Surgery & Medicine), 1977, 1992. B.S., D.V.M., Texas A&M; M.S., Auburn
- SOUTH, DAVID B., *Professor* (Forestry), 1975, 1993. B.S., M.S., North Carolina State; Ph.D., Auburn
- SOX, CHARLES R., *Assistant Professor* (Indust. Engineering), 1992. B.S., Furman; M.S., Ph.D., Cornell
- SPAIN, R. SYDNEY, *Associate Dean & Associate Professor* (Architecture), 1989, 1990. B.Arch., M.Arch., M.C.P., Georgia Tech; Ph.D., Texas A&M
- SPANO, JOSEPH S., *Professor* (Pathobiology), 1977, 1983. D.V.M., Ph.D., Colorado State
- SPARROW, EMILY A., *Instructor* (Curriculum & Teaching), 1996. B.S., M.S., Ed.D., Auburn
- SPARROW, THOMAS W., *Director*, SAC/Coliseum, 1971. B.S., Auburn
- SPENCER, SAMIA I., *Professor* (Foreign Languages & Literatures), 1972, 1985. B.A., Alexandria; M.A., Ph.D., Illinois
- SPENCER, WILLIAM A., *Professor* (Educational Foundations, Leadership & Technology), 1971, 1993. B.A., Southern Illinois; M.A., Ph.D., Illinois
- SPINDLER, CHARLES J., *Associate Professor*, (Political Science), 1989, 1993. B.A., Florida State; M.S., Valdosta State; D.P.A., Georgia
- SPIVEY, DONALD W., *Supervisor*, Facilities, 1975, 1989.
- SPRING, DONALD J., *Associate Professor* (Aerospace Engineering), 1986. B.A.E., M.A.E., Auburn; Ph.D., Illinois
- SQUILLACOTE, MICHAEL E., *Associate Professor* (Chemistry), 1987. B.S., Chicago; Ph.D., UCLA
- ST. JOHN, DWIGHT W., *Assistant Professor* (English), 1977. B.A., Hamline; M.A., Ph.D., Ohio
- STADLER, HOLLY A., *Professor & Head* (Counseling & Counseling Psychology), 1995. B.A., M.S., Ph.D., Purdue
- STALLINGS, J. MICHAEL, *Titled Associate Professor* (Civil Engineering), 1988, 1996. B.C.E., M.S.C.E., Auburn; Ph.D., Texas
- STALLWORTH, JEFF, *Specialist III*, University Computing, 1996.
- STANBURY, DAVID M., *Alumni Professor* (Chemistry), 1987, 1994. Ph.D., Sou. California
- STANWICK, PETER A., *Assistant Professor* (Management), 1992, 1994. B.A., W. Ontario; M.B.A., Washington; Ph.D., Florida State
- STANWICK, SARAH D., *Assistant Professor* (Accountancy), 1992, 1993. B.S., North Carolina-Greensboro; M.Ac., North Carolina; Ph.D., Florida State
- STAPLES, BARBARA L., *Specialist II*, University Computing, 1994. B.I.E., Auburn; M.S., Long Island
- STARR, PAUL D., *Professor* (Sociology), 1975, 1985. A.B., Univ. of the Pacific; M.A., Ph.D., Cal.-Santa Barbara
- STAUFFER, BONNIE B., *Program Developer II*, Outreach Program Office, 1996. B.A., M.S., New Mexico; Ed.D., Northern
- STAUFFER, ROBERT W., *Visiting Assistant Professor* (Health & Human Performance), 1996. B.S., Frostburg State; M.Ed., Virginia; Ed.D., Temple
- STEEGER, JAN G., *Senior Research Associate*, (Fisheries & Allied Aquacultures), 1996. B.S.E., Henderson State; M.S., Arizona
- STEGALL, GERRY C., *Instructor* (Nursing), 1993. B.S.N., Auburn; M.N., Emory
- STEISS, JANET, *Associate Professor*, Scott-Ritchey Research, 1986, 1989. B.Sc., Waterloo; D.V.M., Guelph; Ph.D., Georgia
- STELTENPOHL, MARK G., *Associate Professor* (Geology), 1989, 1994. B.S., M.S., Alabama; Ph.D., North Carolina
- STEPHENS, ANGIE B., *Advancement Officer I*, Alumni Administration, 1994. B.A., Auburn
- STEPHENS, LISA J., *Contract Administrator*, Contracts & Grants, 1995. B.A., Auburn
- STEPHENS, MARGARET, *Instructor* (Foreign Language), 1989, 1996. B.J., M.A., Missouri
- STEPHENSON, JOSEPH B., *Associate Professor & Head* (Music), 1967, 1991. B.M., M.M., Peabody Conservatory
- STEVENSON, SANDRA S., *Assistant Professor* (Nursing), 1991. B.S.N., M.S.N., Alabama-Birmingham; Ed.S., Troy State; Ed.D., Auburn
- STEWART, ELIZABETH A., *Counselor*, Student Development Services, 1987, 1988. B.S., M.Ed., Auburn
- STEWART, GENE B., *Manager*, University Computing Services, 1983, 1992. B.A., Texas Christian; M.S., Auburn
- STEWART, JOHN M., *Manager*, University Computing Services, 1979, 1981. B.S., M.S., Auburn
- STOKES, JENNIFER, *Clinical Instructor* (Communication Disorders), 1996. B.S., M.C.D., Auburn
- STOKLEY, SUSAN L., *Specialist*, Program for Students with Disabilities, 1992, 1994. B.S., M.Ed., Auburn
- STOLT, MARK H., *Assistant Professor* (Agronomy & Soils), 1998. B.S., M.S., Maryland; Ph.D., Virginia Tech
- STONE, JAMES H., *Chief Information Officer*, Telecom. & ETV, 1968, 1995. B.A., David Lipscomb; M.A., Michigan State
- STOREY, KAYE G., *Director*, Student Financial Aid, 1993, 1996. B.A., M.Ed., Auburn
- STOREY, TODD A., *Chief Air Transport Pilot*, AU Aviation, 1984. B.S., Auburn
- STRAIN, WILLIE L., *Associate Professor* (Journalism), 1955, 1991. B.S., M.Ed., Tuskegee; M.S., Wisconsin
- STRAITON, THOMAS H., *Librarian III & Head*, Library, 1980, 1992. B.S., Auburn; M.L.S., Alabama
- STRAWN, HARRY B., *Professor* (Coop. Ext.), 1969, 1988. B.S., North Carolina State; M.S., Ph.D., Tennessee
- STRAWN, SARAH S., *Manager* (Nutrition & Food Science), 1977, 1995. B.S., North Carolina; M.S., Tennessee
- STREITZ, FREDERICK H., *Assistant Professor* (Physics), 1995. B.S., Harvey Mudd; M.A., Ph.D., Johns Hopkins
- STRIBLING, LEE, *Ext. Specialist & Associate Professor* (Zoology-Wildlife Science), 1985, 1992. B.S., South Carolina; M.S., Clemson; Ph.D., North Carolina State
- STRICKLIN, SCOTT A., *Associate Director*, Sports Information, Athletic Department, 1993. B.A., Mississippi State
- STRINGFELLOW, DAVID A., *Professor* (Pathobiology), 1983, 1994. D.V.M., Cornell; M.S., Auburn
- STRINGFELLOW, JOYCE S., *Adjunct Instructor & Diag.* (Microbiology), 1977, 1984. B.S., M.S., Auburn
- STROTHER, GENE R., *Associate Professor* (Entomology), 1973, 1988. B.S., M.S., Ph.D., LSU
- STROTHER, NELL C., *Senior Academic Advisor* (Liberal Arts), 1984, 1990.
- STROUD, JAMES E., *Manager*, Union Building Operations, 1974.
- STROUP-GARDINER, MARY, *Assistant Professor* (Civil Engineering), 1997.
- STRUEMLER, BARBARA, *Associate Professor* (Nutrition & Food Science), 1984. B.S., Nebraska; M.S., Ph.D., Iowa State
- STUART, FRANK C., *Specialist III* (Adm.-Vet Med), 1997.
- STUCKWISCH, STEPHEN E., *Assistant Professor* (Mathematics), 1982. B.A., SUNY-Binghamton; M.A., Ph.D., Arizona State
- SUGG, JANET R., *Lead Specialist*, Academic Computing Services, 1981, 1994. B.A., N. Alabama
- SUHLING, JEFFREY C., *Associate Professor* (Mechanical Engineering), 1985, 1990. B.S., M.S., Ph.D., Wisconsin

Faculty and Staff

- SULLINGER, PAULA, *Librarian II*, Library, 1992. B.A., Alabama-Birmingham; M.S.L.S., North Carolina
- SUMMERFORD, ROY, *Senior Editor*, University Relations, 1983, 1995. B.A., Auburn; M.S., Ga. Col.; M.S., Troy State
- SUNDERMANN, CHRISTINE, *Alumni Professor* (Zoology-Wildlife Science), 1984, 1994. B.S., Iowa State; M.S., Ph.D., Georgia
- SUTTON, CHARLOTTE D., *Associate Professor* (Management), 1986, 1995. B.A., M.B.A., Baylor; Ph.D., Texas A&M
- SUTTON, DAVID L., *Assistant Professor* (Communication), 1993, 1995. B.A., Baylor; M.A., Auburn; Ph.D., Georgia
- SWAIM, JANN B., *Estimator/Expeditor*, Adm.-Facilities, 1986, 1994
- SWAIM, STEVEN F., *Professor*, Scott-Ritchey Research, 1969, 1990. B.S., D.V.M., Kansas State; M.S., Auburn
- SWAMIDASS, PAUL M., *Professor* (Management), 1992, 1996. B.E., Osmania; M.B.A., Ph.D., Washington
- SWANGER, DAVID B., *Lead Specialist*, Academic Computing Services, 1985, B.S., Auburn
- SWANGO, LARRY J., *Professor*, Lab Animal Resources, 1972, 1996. B.S., D.V.M., Oklahoma State; Ph.D., Purdue
- SWANN, STEPHEN H., *Laboratory Manager* (Chemistry), 1996, B.S., East Tennessee; M.S., Tennessee
- SWANSON, DONALD G., *Professor* (Physics), 1980, 1985. B.Theo., NW Christian; B.S., Oregon; M.S., Ph.D., Cal. Tech
- SWANSON, JOHN C., *Visiting Assistant Professor* (History), 1996, B.A., Boston U.; M.A., Ph.D., Minnesota
- SZECHI, DANIEL, *Titled Professor* (History), 1988, 1995. B.A., Sheffield; Ph.D., St. Antony's
- SZEDLMAYER, STEPHEN T., *Ext. Specialist & Associate Professor* (Fisheries & Allied Aquacultures), 1990, 1995. B.A., Millersville; M.S., S. Florida; Ph.D., William & Mary
- SZULGA, JERZY, *Professor* (Mathematics), 1987, 1994. M.S., Ph.D., Wroclaw-Poland
- TABOR, RICHARD H., *Associate Professor* (Accountancy), 1985, 1995. B.S., M.B.A., Tennessee; Ph.D., Florida
- TALBOT, RICHARDE M., *Assistant Editor*, University Relations, 1996, B.A., Auburn
- TAM, TIN Y., *Associate Professor* (Mathematics), 1988. B.Sc., Ph.D., Hong Kong
- TANG, RUEN C., *Professor* (Forestry), 1978. B.S., Nat'l Chung-Hsing; Ph.D., North Carolina State
- TANG, YUNG, *Research Associate* (Chemical Engineering), 1994. B.S., Wuhan; M.S., Huadong; M.S., Auburn
- TANJA, JON J., *Associate Professor* (Clinical Pharmacy), 1974. B.S., Ferris State; M.S., Iowa
- TANNER, MARGARET E., *Supervisor* (Fisheries & Allied Aquacultures), 1984. B.S., Troy State
- TAPELY, DAVID W., *Instructor* (Zoology-Wildlife Science), 1993, 1994. B.S., Oregon State; M.S., Ph.D., Maine
- TARRER, ARTHUR R., *Professor* (Chemical Engineering), 1974, 1983. B.S., Auburn; M.S., Ph.D., Purdue
- TATARCHUK, BRUCE J., *Professor & Director* (Chemical Engineering), 1981, 1996. B.S., Illinois; Ph.D., Wisconsin
- TAYLOR, C. ROBERT, *Alfa Eminent Scholar* (Agricultural Economics & Rural Sociology), 1988. B.S., Oklahoma State; M.S., Kansas State; Ph.D., Missouri
- TAYLOR, CHARLES, *Assistant Chief Engineer*, ETV, 1981, 1990
- TAYLOR, DAVID B., *Research Associate* (Forestry), 1990, 1995. B.A., M.A., Brigham Young
- TAYLOR, JANET B., *Professor* (Curriculum & Teaching), 1979, 1993. B.S., M.Ed., Francis Marion; Ph.D., Florida State
- TAYLOR, KELLEY G., *Specialist*, Personnel Services, 1995. B.S., Oglethorpe
- TAYLOR, MARTHA M., *Director*, Contracts & Grants, 1989, 1993. B.S., Florida
- TAYLOR, STEVEN E., *Associate Professor* (Agricultural Engineering), 1989, 1995. B.S., M.E., Florida; Ph.D., Texas A&M
- TEDESCO, JOSEPH W., *Professor* (Civil Engineering), 1984, 1996. B.S.C.E., Notre Dame; M.S.C.E., Tufts; Ph.D., Lehigh
- TEEM, DAVID H., *Professor* (Adm.-Ag. Experiment Station), 1984, 1993. B.S., M.S., Ph.D., Auburn
- TEETER, LAWRENCE D., *Associate Professor* (Forestry), 1985, 1991. A.B., Michigan; Ph.D., Colorado State
- TEIRLINCX, LUC M., *Professor* (Discrete & Statistical Sciences), 1982, 1995. B.A., Ph.D., Vrije
- TERRELL, JO ANN, *Instructor* (Curriculum & Teaching), 1994. B.S., M.A., Auburn
- TERRY, BETSY, *Manager*, AU Bookstore, 1990, 1995. B.S., M.B.A., Auburn
- TERRY, MARK D., *Assistant Professor* (Aerospace Studies), 1995. B.S., Kentucky; M.S., Embry Riddle
- TEW-WASHBURN, SUZANNE, *Project Director* (Rehabilitation & Special Education), 1993. B.A., Columbus Col.; M.S., Troy State
- THAKUR, MRINAL, *Associate Professor* (Mechanical Engineering), 1990. Ph.D., Case Western
- THIEMANN, FRED, *Instructor* (English), 1995. B.A., M.A., Southeastern Louisiana; Ph.D., Auburn
- THIEMANN, MELANIE F., *Instructor* (English), 1993, 1995. B.A., W. Florida; M.A., Auburn
- THOMAS-VINSON, JOYCE, *Program Developer II*, Outreach Program Office, 1994. B.A., Alabama
- THOMAS, ALBERT W., *Instructor* (Music), 1991. B.M., Auburn; M.M., Arkansas
- THOMAS, CHARLES M., *Administrator*, University Computing Services, 1980, 1983. B.S.E.E., M.B.A., Auburn
- THOMAS, E. LEE, *Health Educator*, Student Health Ctr., 1991. B.B.A., M.Ed., Mississippi State
- THOMAS, HOWARD L., *Assistant Professor* (Textile Engineering), 1995. B.S., M.S., Georgia Tech; Ph.D., Clemson
- THOMAS, JAMES A., *Marketing Director*, Athletic Department, 1994. B.A., Kentucky; M.S.A., Ohio Univ.
- THOMAS, ROBERT E., *Associate Professor* (Indust. Engineering), 1988, 1994. B.S., Georgia Tech; M.S., Ph.D., Texas A&M
- THOMAS, SELBY G., *Visiting Assistant Professor* (Clinical Pharmacy), 1989, 1996. B.S., Auburn; Pharm.D., Auburn
- THOMMENSEN, SVEN N., *Research Associate* (Consumer Affairs), 1996. B.A., Auburn M.A., C.Phil., California-Los Angeles
- THOMPSON, CATHY W., *Academic Counselor*, Athletic Department, 1994, 1996. B.M., M.M., Auburn
- THOMPSON, EMMETT, *Dean & Professor of Forestry, and Associate Director, Agricultural Experiment Station* 1977, 1997. B.S., Oklahoma State; M.S., North Carolina State; Ph.D., Oregon State
- THOMPSON, HELEN, *Instructor* (English), 1996. B.A., Swansen; M.A., Ph.D., Southern Mississippi
- THOMPSON, HENRY L., *Professor* (Economics), 1987, 1994. B.S., Ph.D., Houston
- THOMPSON, ISABELLE, *Associate Professor* (English), 1981, 1988. B.S., N.C. Wesleyan; M.A.T., Ed.D., Duke; M.A., North Carolina State
- THOMPSON, SUE A., *Academic Advisor* (Adm.-Engineering), 1993. B.A., Auburn
- THORNTON, JAN D., *Director*, Industrial Programs, 1994, 1995. B.A., Alabama-Huntsville; M.B.A., Alabama; J.D., Samford
- THORNTON, LINDA, *Librarian III*, Library, 1989, 1996. B.S., SUNY; M.S.L.S., Clarion
- TILLMAN, THOMAS E., *Architect*, Facilities, 1994. B.Arch., Auburn
- TILLSON, DAVID M., *Assistant Professor* (Small Animal Surgery & Medicine), 1995. B.S., B.S., D.V.M., North Carolina State; M.S., Kansas State
- TILT, KENNETH M., *Professor* (Horticulture), 1989, 1996. B.A., M.S., E. California B.S., Ph.D., North Carolina State
- TIN, CHIN-CHE, *Associate Professor* (Physics), 1987, 1996. B.Sc., M.Sc., London; Ph.D., Alberta
- TIPPU, HAREESH V., *Associate Professor* (Mechanical Engineering), 1990, 1995. B.S., Bangalore; M.E., India; Ph.D., SUNY
- TISDALE, SCOTT B., *Lead Specialist*, University Computing, 1994, 1995. B.I.E., Auburn
- TOLBERT, BURNETTE N., *Specialist III*, Purchasing, 1988, 1996. B.S., Auburn
- TOLE, THOMAS M., *Associate Professor* (Finance), 1974. D.B.A., Oklahoma
- TORREJO, ALFREDO, *Associate Professor* (Foreign Languages & Literatures), 1990, 1992. B.A., Chile; M.A., Ph.D., SUNY
- TOUCHTON, JOSEPH T., *Professor & Head* (Agronomy & Soils), 1980, 1989. B.S., M.S., Georgia; Ph.D., Illinois

Faculty and Staff

- TOWNSEND, I. DIANE, *Exec. Dev. Prog. Assoc. (Adm.-Business)*, 1977, 1993.
- TRANSUE, WILLIAM R., *Associate Professor (Mathematics)*, 1967, A.B., Harvard; Ph.D., Georgia
- TRAXLER, GREGORY J., *Associate Professor (Agricultural Economics & Rural Sociology)*, 1990, 1995, B.B.A., Portland; M.S., Minnesota; Ph.D., Iowa State
- TRAYLOR, J. RICK, *Personnel Manager, Facilities Division*, 1996, B.A., Auburn/Montgomery
- TRIMBLE, WILLIAM F., *Professor (History)*, 1985, 1995, B.A., M.A., Ph.D., Colorado
- TRINCHITELLA, CAROL, *Librarian II, Library*, 1992, B.A., SUNY-Albany; M.A., M.L.S., Indiana U.
- TROUSE, ALBERT C., *Adjunct Associate Professor, USDA Tillage Lab*, 1992
- TROY, JUDY R., *Associate Professor (English)*, 1992, 1996, B.A., Illinois-Chicago; M.A., Indiana
- TRUPP, KIM, *Associate Director, Housing & Res. Life*, 1979, 1985, B.S., M.Ed., Auburn
- TRUPP, THEODORE, *Coordinator, Recreation Services*, 1981, 1996, B.S., M.Ed., Auburn
- TRUSSELL, JULIE E., *Manager, Bursar's Office*, 1989, 1995, B.S., Auburn
- TUCKER, JALIE A., *Professor (Psychology)*, 1989, 1991, B.S., Duke; M.A., Ph.D., Vanderbilt
- TUCKER, JAMES W., *Research Assistant II (Zoology-Wildlife Science)*, 1994, 1995, B.S., Auburn; M.S., New Hampshire
- TUCKER, KRISTAL R., *Research Specialist, (Forestry)*, 1995, B.S., Tennessee
- TUFTS, ROBERT A., *Associate Professor (Forestry)*, 1979, 1989, B.S.F., M.S., LSU; Ph.D., Virginia Tech
- TUGNAIT, JITENDRA K., *Professor (Electrical Engineering)*, 1989, B.Sc., Punjab; M.S.E.E., Syracuse; Ph.D., Illinois
- TURK, GEORGE W., *Instructor (Finance)*, 1990, 1992, B.S., M.B.A., Auburn
- TURNER, DAVID L., *Senior Research Associate (Agronomy & Soils)*, 1982, 1993, B.S., M.S., Auburn
- TURNER, JOSEPHINE, *Professor (Human Development & Family Studies)*, 1987, B.S., Alabama; Ph.D., Purdue
- TURNQUIST, PAUL K., *Professor & Head (Agricultural Engineering)*, 1977, B.S., Kansas State; M.S., Ph.D., Oklahoma State
- TUZUN, SADIK, *Associate Professor (Plant Pathology)*, 1990, 1994, M.S., Ankara; Ph.D., Kentucky
- TWALE, DARLA J., *Associate Professor (Educational Foundations, Leadership & Technology)*, 1987, 1992, B.A., Geneva; M.A., Duquesne; M.A., Ph.D., Pittsburgh
- TYSON, TED W., *Associate Professor (Agricultural Engineering)*, 1985, 1988, B.S., M.S., Georgia
- TZENG, YONHUA, *Professor (Electrical Engineering)*, 1983, 1995, B.S., Natl. Taiwan; M.S., Ph.D., Texas Tech
- UHLIG, FRANK D., *Professor (Mathematics)*, 1982, 1985, M.A., Ball State; Ph.D., Cal. Tech
- ULLERY, WILLIAM D., *Associate Professor (Mathematics)*, 1987, 1991, B.A., Harvard; M.S., Ph.D., Arizona
- ULRICH, PAMELA V., *Assistant Professor (Consumer Affairs)*, 1987, 1992, B.S., Oregon State; M.S., Auburn Ph.D., Oregon
- UNGER, VERNON E., *Professor & Head (Indust. Engineering)*, 1979, B.E.S., M.S.M.S., Ph.D., Johns Hopkins
- UZUMERI, MUSTAFA V., *Assistant Professor (Management)*, 1991, B.A., Toronto; M.B.A., York; Ph.D., Rensselaer
- VAN NOSTRAND, RODNEY, *Instructor (Architecture)*, 1997, B.A., Emory
- VAN SANTEN, EDZARD, *Associate Professor (Agronomy & Soils)*, 1988, 1993, M.Sc., Ph.D., Wisconsin-Madison
- VAN SANTEN, VICKY L., *Associate Professor (Pathobiology)*, 1988, 1993, B.A., McPherson; Ph.D., Chicago
- VAN VALKENBURGH, REBECCA G., *EDP Auditor, Internal Auditing*, 1986, B.S., Troy State; M.B.A., Auburn
- VANCE, PAMELA H., *Assistant Professor (Industrial Engineering)*, 1993, B.Ch.E., M.S., P.H.S., Georgia Tech
- VAUGHN, BRIAN E., *Professor (Human Development & Family Studies)*, 1988, B.A., Arizona State; M.A., Ph.D., Minnesota
- VAZIN, TINA G., *Visiting Assistant Professor (Psychology)*, 1995, B.S., M.A., Ph.D., Auburn
- VAZSONYI, ALEXANDER T., *Assistant Professor (Human Development & Family Studies)*, 1996, B.S., Grand Valley State; M.S., Ph.D., Arizona
- VEASLEY, DEVRON A., *Management Scientist, Small Bus. Development Ctr.*, 1990, 1992, B.A., M.B.A., Auburn
- VECELLIO, ROBERT L., *Associate Professor (Civil Engineering)*, 1973, B.C.E., M.S., Ph.D., Ohio State
- VEDDER, JOHN D., *Basic Skills Trainer, Building Service*, 1980, 1995, B.S., M.S.L.S., North Carolina
- VEEH, JERRY A., *Associate Professor (Discrete & Statistical Sciences)*, 1981, 1986, B.S., M.S., Ph.D., California
- VERMA, MICHAEL E., *Assistant Professor (Civil Engineering)*, 1996, B.S., M.S., Ph.D., Iowa
- VEST, MONROE F., *Manager, Admin. Computing Svc.*, 1977, 1983, B.S.B.A., M.B.A., Auburn
- VEST, TERESA P., *Assistant Director, Budget Control*, 1984, 1990, B.S., B.S., Auburn
- VEVERICA, KAREN L., *Senior Research Associate (Fisheries & Allied Aquacultures)*, 1981, B.S., Michigan State; M.S., Oregon State
- VILLAUME, SUSAN, *Associate Professor (Curriculum & Teaching)*, 1988, 1995, B.A., Carson Newman; M.S., Tennessee; Ph.D., Ohio State
- VILLAUME, WILLIAM A., *Associate Professor (Communication)*, 1983, 1991, B.A., Waterloo; M.Div., Lutheran Theo.; M.A., Ph.D., Ohio State
- VINCENT, PATSY F., *Manager, AU Aviation*, 1980, 1988, B.S., Troy State
- VINING, LEONARD J., *Research Associate (Fisheries & Allied Aquacultures)*, 1990, 1994, B.S., SUNY; M.S., Alaska
- VINSON, JOHNNIE B., *Professor & Band Director (Music)*, 1976, 1990, B.S., M.Ed., Auburn; D.A., Mississippi
- VINSON, NANCY M., *Instructor (Music)*, 1995, B.M., Auburn; M.M., Mississippi
- VODYANOV, VITALY, *Professor (Physiology & Pharmacology)*, 1989, 1993, Ph.D., Physical Tech U
- VOIT, BONNIE B., *Coordinator, Student Development Services*, 1972, 1996, B.A., Sanford; M.Ed., Tennessee
- VOITTE, ROBERT A., *Associate Dean (Agriculture)*, 1981, 1985, B.S., M.S., W. Virginia; Ph.D., Tennessee
- VUCHINICH, RUDOLPH E., *Professor (Psychology)*, 1989, B.S., Indiana State; M.A., Ph.D., Vanderbilt
- WADDELL, FRED E., *Associate Professor (Human Development & Family Studies)*, 1988, B.A., Kentucky; M.S., Kansas State; Ph.D., Virginia Tech
- WADE, WILLIAM C., *Director, University Computing*, 1974, 1986, B.S., Auburn
- WADENPUHL, LAURA A., *Instructor (English)*, 1996, B.A., Ph.D., CUNY; M.A., Rutgers
- WADIBIA, E. CHUMA, *Assistant Professor (Clinical Pharmacy)*, 1996, B.S.Pharm; M.A., PharmD., Creighton
- WAGONER, GARY W., *Associate Professor (Art)*, 1980, 1987, B.F.A., Wichita State; M.F.A., Alfred
- WAITES, DARYL K., *Manager, Digital Rep. Facility*, 1978, 1985
- WALDROP, MICHAEL M., *Assistant Director, Admissions Office*, 1994, B.S., Freed-Hardeman; M.A.R., Harding
- WALKER, CARL, *Assistant Professor (Military Science)*, 1993, B.S., Jacksonville State
- WALKER, ROBERT H., *Professor (Agronomy & Soils)*, 1974, B.S., M.S., Ph.D., Mississippi State
- WALKER, WILLIAM F., *Dean & Professor (Adm.-Engineering)*, 1988, 1995, B.S., M.S., Texas; Ph.D., Oklahoma State
- WALL, CYNTHIA A., *Training Assistant, Athletic Dept.*, 1991, B.S., Arizona State; M.S., Kentucky
- WALL, JAMES R., *Professor (Discrete & Statistical Sciences)*, 1971, 1992, A.B., Knox; M.A., Nebraska; Ph.D., Tennessee
- WALLACE, BYRON F., *Greenhouse Supervisor, Plant Growth Center*, 1996
- WALLACE, GEORGE M., *Associate Professor (Building Science)*, 1989, B.S., M.B.A., Auburn
- WALLACE, RICHARD K., *Associate Professor (Fisheries & Allied Aquacultures)*, 1983, 1988, B.A., Ohio Wesleyan; M.S., Puerto Rico; Ph.D., Auburn

Faculty and Staff

- WALSH, SUSAN D., *Research Assistant* (Animal & Dairy Sciences), 1994. B.S., Auburn
- WALSH, WILLIAM K., *Professor & Head* (Textile Engineering), 1989. B.S., South Carolina; Ph.D., Ph.D., North Carolina State
- WASHBURN, ELSIE JO, *Specialist* (Vocational & Adult Education), 1991. B.S., M.Ed., E.D.O., Auburn
- WALTERS, BARBARA B., *Instructor* (Curriculum & Teaching), 1995. B.S., Mississippi; M.Ed., W. Florida; Ed.D., Auburn
- WALTER, ELIZABETH H., *Facilitator*, Auburn Conference Center, 1992, 1993. B.S., Auburn
- WALTERS, DONALD E., *Assistant Professor* (Pharmacology), 1990. B.S., St. Louis; Ph.D., Louisville
- WALTERS, FRANKLIN D., *Associate Professor* (English), 1991, 1996. B.S., M.A., Duquesne; Ph.D., N. Illinois
- WALTERS, KENNETH W., *Assistant Professor* (Philosophy), 1964. B.A., Roosevelt; M.A., Ph.D., Northwestern
- WANG, SHU-YI, *Research Associate* (Plant Pathology), 1996. M.S., Auburn
- WANG, YONG T., *Associate Professor* (Health & Human Performance), 1991, 1996. B.S., M.S., Wuhan; M.A., Ball State; Ph.D., Illinois
- WARD, KEITH J., *Director & Associate Professor* (Ctr.-Governmental Services), 1976. B.S., M.P.A., BYU; Ph.D., Tennessee
- WARD, COLEMAN Y., *Professor* (Agronomy & Soils), 1995. B.S., Texas Tech; Ph.D., Virginia Polytechnic
- WARD, JEROME V., *Visiting Assistant Professor* (Botany-Microbiology), 1996. B.A., Ph.D., Arizona State; M.S., Northern Arizona
- WARD, ROBERT M., *Research Supervisor* (Fisheries & Allied Aquacultures), 1983, 1990
- WARE, MORRIS T., *Hospital Administrator* (Small Animal Surgery & Medicine), 1979, 1986
- WARFIELD, CAROL L., *Professor & Head* (Consumer Affairs), 1977, 1991. B.S., South Dakota State; M.S., Ph.D., Illinois
- WASHINGTON, JOEY L., *Specialist III*, Admin. Comp. Services, 1979, 1982
- WATERS, JANICE E., *Manager*, Plainsman, 1995. B.A., Stephens; B.A., Alabama
- WATERS, JOHN P., *Academic Counselor III*, Athletic Dept., 1979, 1995. B.A., Auburn; M.A., Florida
- WATERS, MARY R., *Adjunct Instructor & Editor Assoc.* (English), 1979, 1983. B.A., Stetson; M.A., Florida; Ph.D., Auburn
- WATKINS, G. MICHAEL, *Assistant Professor* (Philosophy), 1994. B.A., M.A., Tennessee; Ph.D., Ohio State
- WATSON, JIMMY L., *Supervisor*, Automotive Shop, 1967, 1996
- WATTS, CHRISTOPHER A., *Assistant Professor* (Physics), 1996. B.A., Occidental; Ph.D., Wisconsin
- WEAR, MARY JO, *Assistant Director*, International Programs, 1974, 1989
- WEATHERBY, DENNIS W., *Minority Engineering Program Director* (Adm. Engineering), 1996. B.S., Central State; M.S., Dayton
- WEAVER, ANDREW, *Professor & Head* (Curriculum & Teaching), 1960, 1983. B.S., Tennessee Tech; M.A., Ed.D., Tennessee
- WEAVER, CHARLES F., *Senior Research Associate* (Plant Pathology), 1977, 1992. B.A., Auburn
- WEAVER, DAVID B., *Professor* (Agronomy & Soils), 1981, 1992. B.S.A., M.S., Georgia; Ph.D., Purdue
- WEAVER, JAMES B., *Associate Professor* (Communication), 1989. B.S., M.A., Georgia; Ph.D., Indiana
- WEAVER, KAREN K., *Instructor* (Curriculum & Teaching), 1994. B.S., M.S., Georgia
- WEBB, THOMAS R., *Associate Professor* (Chemistry), 1975, 1982. B.S., Oregon State; Ph.D., Iowa State
- WEEKS, JAMES R., *Associate Professor* (Entomology), 1975. B.S., M.S., Auburn
- WEESE, JEAN, *Assistant Professor* (Nutrition & Food Science), 1987, 1990. B.S., M.S., E. Kentucky; Ph.D., Tennessee
- WEETE, JOHN D., *Associate Dean & Director* (Botany-Microbiology), 1972, 1992. B.S., M.S., SF Austin State; Ph.D., Houston
- WEHRS, DONALD R., *Associate Professor* (English), 1988, 1993. B.A., Williams; M.A., Ph.D., Virginia
- WEHTJE, GLENN R., *Professor* (Agronomy & Soils), 1981, 1996. B.S., Washington State; M.S., North Dakota State; Ph.D., Nebraska
- WEIGEL, ROBERT G., *Assistant Professor* (Foreign Languages & Literatures), 1993. M.A., M.A., Ph.D., Albany State-New York
- WEISBROD, ELIZABETH, *Librarian II*, Library, 1990. B.M., Missouri; M.S., Illinois; M.M., Notre Dame
- WEISS, PETER M., *Associate Professor* (Building Science), 1983, 1990. B.A., Iowa State; B.Arch., Arizona; M.A., Cornell
- WEISS, RICHARD C., *Associate Professor*, Scott-Ritchey Research, 1985, 1990. B.S., Rutgers; V.M.D., Pennsylvania; Ph.D., Cornell
- WELCH, JANET A., *Assistant Professor* (Small Animal Surgery & Medicine), 1995. B.S., D.V.M., Cornell
- WELLES, ELIZABETH G., *Associate Professor* (Pathobiology), 1990, 1995. B.S., North Carolina State; D.V.M., Auburn; Ph.D., Georgia
- WELLS, JOHN M., *Assistant Professor* (Economics), 1994. B.S., Texas Tech; Ph.D., Texas A&M
- WELT, ELINOR H., *Professor & Univ. Writer-in-Residence* (English), 1987. B.A., Morningside; M.A., South Dakota; Ph.D., Iowa
- WELSH, STEVE L., *Research Supervisor*, (Poultry Science), 1988, 1996
- WENTWORTH, STUART M., *Associate Professor* (Electrical Engineering), 1990, 1996. B.S., Auburn; M.S., Ph.D., Texas
- WENZEL, JAMES G.W., *Associate Professor* (Large Animal Surgery & Medicine), 1990, 1996. D.V.M., Auburn; M.S., Georgia; Ph.D., Minnesota
- WERNETTE, CATHERINE M., *Assistant Professor* (Chemistry), 1992. B.S., M.S., Ph.D., Michigan State
- WERSINGER, JEAN-MARIE P., *Associate Professor* (Physics), 1979, 1982. B.S., Greable; Ph.D., Ecole-Lausanne
- WESSON, CAMERON B., *Instructor* (Sociology), 1995. B.S., B.A., Auburn; M.A., Illinois
- WEST, MARK S., *Associate Professor* (Discrete & Statistical Science), 1989, 1994. B.S., South Alabama; Ph.D., Alabama
- WESTMORELAND, THOMAS, *Coordinator* (Psychology), 1973. B.A., Moorhead State
- WHANG, PATRICIA A., *Associate Professor* (Educational Foundations, Leadership & Technology), 1991, 1996. B.A., Indiana U.; M.A., Ph.D., California
- WHATLEY, ELIZABETH M., *Medical Technologist* (Pathobiology), 1981. B.S., Auburn; M.T., Lloyd Nolan
- WHATLEY, ROBERT G., *Clinical Instructor* (Nursing), 1994. B.S.N., Auburn
- WHEAT, ROBERT S., *Research Specialist* (Forestry), 1993. B.S. Auburn-Montgomery
- WHITE, B. DOUGLAS, *Assistant Professor* (Nutrition & Food Science), 1996. B.S., M.S., Auburn; Ph.D., LSU
- WHITE, BONNIE J., *Associate Professor & Head* (Vocational & Adult Education), 1974, 1996. B.A., Evangel; M.S., Florida State; M.A., E. Kentucky; Ed.D., Tennessee
- WHITE, CARMEL P., *Visiting Assistant Professor* (Human Development & Family Studies), 1992, 1996. B.S., M.S., Brigham Young; Ph.D., Kansas State
- WHITE, LATRICIA Y., *Insurance Coordinator*, Risk Management and Property Services, 1996. B.S., Alabama A&M
- WHITE, LEANN S., *Instructor* (Curriculum & Teaching), 1995. B.S., M.S., Auburn
- WHITE, MARK B., *Assistant Professor* (Human Development & Family Studies), 1992. B.A., M.S., Brigham Young; Ph.D., Kansas State
- WHITE, STEPHEN W., *Associate Professor* (Philosophy), 1985. B.A., Oglethorpe; M.A., Ph.D., Georgia
- WHITLEY, ROBERT D., *Titled Professor* (Small Animal Surgery & Medicine), 1989, 1995. D.V.M., M.S., Auburn
- WHITTEN, DAVID O., *Professor* (Economics), 1968, 1982. B.S., Charleston; M.A., South Carolina; Ph.D., Tulane
- WIDELL, JANET A., *Instructor* (Nursing), 1997. B.S.R.N., Columbia; M.S.N., Alabama
- WIDELL, ROBERT W., *Assistant Professor* (Political Science), 1972. A.B., Duke; Ph.D., Stanford

Faculty and Staff

- WILAMOWSKI, BOGDAN MACIEJ, *Visiting Scientist* (Electrical Engineering), 1995. M.Sc., P.Sc., Ph.D., Gdansk
WILBANKS, SHARON H., *Instructor* (Human Development & Family Studies), 1994. B.A., M.S., Auburn
WILBORN-FRAZIER, JACQUELINE D., *Medical Technologist*, Student Health Center, 1992. B.S., Tuskegee
WILCOX, ROY C., *Professor* (Mechanical Engineering), 1969, 1988. B.S., M.S., Virginia Tech; Ph.D., Missouri-Rolla
WILDER, BARBARA F., *Assistant Professor* (Nursing), 1984, 1996. B.S.N., Auburn-Montgomery; M.S.N., Troy State; D.S.N.,
Alabama-Birmingham
WILEY, ANNE A., *Research Associate* (Animal & Dairy Science), 1995. B.S., M.S., Florida
WILHOIT, JOHN H., *Associate Professor* (Agricultural Engineering), 1989, 1995. B.S., M.S., Kentucky; Ph.D., Virginia
WILKE, ARTHUR S., *Professor* (Sociology), 1975, 1994. B.S., Wisconsin; M.A., Ph.D., Minnesota
WILKE, BARBARA J., *Senior Academic Advisor* (Adm.-Business), 1982, 1990.
WILLIAMS, JAMES C., *Professor* (Aerospace Engineering), 1980, 1992. B.S., M.S., Virginia Tech; Ph.D., Sou. California
WILLIAMS, JAMES D., *Associate Professor* (Horticulture), 1984, 1996. B.A., M.S., Auburn; Ph.D., Ohio State
WILLIAMS, JAMES S., *Professor* (Building Science), 1982, 1994. B.S., Toledo; M.S., Clemson
WILLIAMS, JOHN G., *Professor* (Architecture), 1992, 1993. B.A., Haverford Col.; M.Arch., Pennsylvania; M.L.A., Harvard
WILLIAMS, JOHN R., *Professor* (Physics), 1974, 1993. B.S., N. Georgia; Ph.D., North Carolina State
WILLIAMS, KENNETH R., *Specialist*, Graduate Outreach Program, 1994.
WILLIAMS, KING E., *Associate Professor* (Journalism), 1983, 1991. B.A., M.A., Alabama
WILLIAMS, LYNN B., *Librarian III*, Library, 1989, 1994. B.A., SUNY-Buffalo; M.A., Ph.D., Illinois; M.L.S., SUNY-Albany
WILLIAMS, MARK, *Supervisor* (Animal & Dairy Sciences), 1994, 1996. B.S., LSU
WILLIAMS, MARY, *Associate Professor* (Large Animal Surgery & Medicine), 1990, 1995. D.V.M., Auburn; M.S., Michigan State
WILLIAMS, MICHAEL G., *Research Supervisor* (Animal & Dairy Science), 1989, 1990. B.S., Auburn
WILLIAMS, MICHAEL L., *Associate Professor* (Entomology), 1973. B.S., Arkansas State; M.S., Ph.D., Virginia Tech
WILLIAMS, VERLENCIA, *Specialist II*, University Computing, 1986, 1995. B.S., Faulkner; M.S., Troy St.
WILLIS, ELIZABETH L., *Visiting Assistant Professor* (Small Animal Surgery & Medicine), 1994. B.S., M.S., D.V.M., Auburn
WILMOTH, JAMES N., *Professor* (Vocational & Adult Education), 1970, 1987. B.S., Marshall; M.S., Ph.D., Wayne State
WILSON, ARLETTE C., *Titled Professor* (Accountancy), 1985, 1996. B.B.A., M.B.A., Mississippi; Ph.D., Arizona
WILSON DAVID, *Associate Provost & Vice President for University Outreach*, 1995. B.S., M.Ed., Tuskegee; M.Ed., Ed.D.,
Harvard
WILSON, D. DENNIS, *Professor & Head* (Health & Human Performance), 1973, 1984. B.S., Union; M.S., Ed.D., Tennessee
WILSON, LOYANNE, *Instructor* (Nutrition & Food Science), 1996. B.S., M.S., Kentucky; Ph.D., California-Davis
WILSON, MARK, *Assistant Professor* (Plant Pathology), 1994. B.S., Bristol; Ph.D., Manchester
WILSON, MARY E., *Technician* (Radiology), 1990.
WILSON, RUSSELL C., *Associate Professor* (Vocational & Adult Education), 1976, 1982. B.S., South Dakota; M.Ed., Ne-
braska; M.Div., Wesley Theo.; Ph.D., Iowa
WILSON, THOMAS J., *Specialist*, Student Financial Aid, 1995, 1996. B.S., Auburn; M.R.E., Southern Baptist; D.Min., Covington
Theo.
WINDLE, ROBERT T., *Associate Athletic Director*, Athletic Dept., 1990. B.S., Auburn
WINGFIELD, PATRICIA F., *Program Developer II*, Outreach Program Office, 1992, 1994. B.S., Samford
WINKLER, MARY O., *Instructor* (Foreign Language), 1996. B.A., M.H.S., Auburn
WINSLETT, STEPHEN C., *Art Designer II*, University Printing Service, 1993, 1995. B.F.A., Auburn
WIT, LAWRENCE C., *Associate Dean* (Adm.-Sciences & Mathematics), 1976, 1992. B.S., Wheaton; M.S., W. Illinois; Ph.D.,
Missouri
WIX, BRANDON D., *Air Transport Pilot*, AU Aviation, 1995. B.S., Auburn
WOHL, JAMES S., *Assistant Professor* (Small Animal Surgery & Medicine), 1996. B.A., SUNY; D.V.M., Purdue
WOHRLEY, ANDREW J., *Librarian II*, Library, 1995. B.A., Valparaiso; M.L.S., Indiana
WOJCIK, JAN W., *Assistant Professor* (Philosophy), 1992. B.A., M.A., Ph.D., Kentucky
WOLF, LORRAINE W., *Assistant Professor* (Geology), 1993. B.A., M.A., SUNY; Ph.D., Alaska
WOLFE, DWIGHT F., *Professor & Head* (Large Animal Surgery & Medicine), 1980, 1994. B.S., Tennessee; D.V.M., M.S.,
Auburn
WOLFE, KAREN G., *Research Associate* (Anatomy & Histology), 1982, 1996. B.S., Memphis State
WOLFE, LAUREN G., *Professor & Head* (Pathobiology), 1981. D.V.M., M.S., Ph.D., Ohio State
WOLTERS, ROGER S., *Associate Professor* (Management), 1980, 1988. B.A., M.A., N. Florida; Ph.D., Illinois
WOOD, BRENDA M. H., *Research Associate* (Agronomy & Soils), 1993. B.S., Berea; M.S., Auburn
WOOD, CHARLES W., *Alumni Associate Professor* (Agronomy & Soils), 1990, 1993. B.S., M.S., Mississippi State; Ph.D.,
Colorado State
WOOD, JAMES F., *Manager*, Bursar's Office, 1981, 1993. B.S., Troy State
WOODARD, CHERYL A., *Program Specialist II* (Adm.-Business), 1984, 1995
WOODS, ADDINE B., *Assistant Director*, Student Financial Aid, 1990, 1994. B.S., M.S., Alcorn State
WOODS, FLOYD M., *Associate Professor* (Horticulture), 1990, 1996. B.S., Tuskegee; M.S., Cornell; Ph.D., Mississippi State
WOOTEN, MARIE W., *Associate Professor & Head* (Zoology-Wildlife Science), 1987, 1995. B.S., Memphis State; Ph.D., Texas
Womans
WOOTEN, MICHAEL C., *Associate Professor* (Zoology-Wildlife Science), 1986, 1991. B.S., M.S., Memphis State; Ph.D., N.
Texas State
WORLEY, KAREN H., *Chief Medical Technologist* (Pathobiology), 1974. B.S., Auburn; M.T., Alabama-Birmingham
WORLEY, S.D., *Professor* (Chemistry), 1974, 1988. B.S., Auburn; Ph.D., Texas
WORTHINGTON, JAMES S., *Associate Professor* (Accountancy), 1976. B.S.B.A., Pittsburg State; M.A., Ph.D., Missouri
WRIGHT, JAMES, *Associate Professor* (Pathobiology), 1985, 1990. B.S., Virginia Tech; D.V.M., Georgia; M.S., Ph.D., Missouri
WRIGHT, RUTH L., *Assistant Professor* (English), 1965, 1985. B.A., LaGrange; M.A., Auburn
WU, CHWAN-HWA, *Professor* (Electrical Engineering), 1987, 1995. B.S., National Chiao-Tung; M.S., Ph.D., Polytechnic
WYLLIE, ROY, *Associate Professor* (Music), 1980, 1992. B.M., SMU; M.M., Manhattan; D.M.A., Texas
YAN, JIANPING, *Visiting Scientist* (Entomology), 1996. B.Sc., Wuhan
YAN, XINCHE, *Research Associate* (Mechanical Engineering), 1988, 1996. B.S., Nanjing; M.S., Auburn
YANG, BAIYIN, *Visiting Assistant Professor* (Vocational & Adult Education), 1996. B.S., Nanjing; Ph.D., Georgia
YANG, XIAO FENG, *Assistant Professor* (Mechanical Engineering), 1992. B.S., M.S., Tsinghua; Ph.D., Trinity (England)
YAO, CHANGBIN, *Research Assistant* (Plant Pathology), 1993, 1996. B.S., Huazhong
YATES, FRANKLIN D., *Assistant Director*, Property Control, 1978.
YATES, ROSIE, *Supervisor*, Accounts Payable, 1984, 1988.
YEAGER, ANITA J., *Specialist*, Personnel Services, 1988. B.A., Auburn

Faculty and Staff

- YERBY, RICHARD A., *Flight Line Services Head*, AU Aviation, 1988, 1993.
- YOO, CHAI H., *Titled Professor* (Civil Engineering), 1981, 1996. B.S.C.E., Seoul; M.S., Ph.D., Maryland
- YOO, KYUNG H., *Associate Professor* (Agricultural Engineering), 1983, 1990. B.S., Seoul National; M.S., Ph.D., Idaho
- YORK, WILLIAM E., *Professor* (Theatre), 1990. B.F.A., M.F.A., Ohio
- YOST, BRENDA B., *Clinical Instructor* (Nursing), 1996.
- YOUNG, GEORGE J., *Ext. Specialist & Professor* (Agricultural Economics & Rural Sociology), 1980, 1995. B.S., M.S., Illinois
- YOUNG, SAM W., *Associate Professor* (Mathematics), 1977. B.A., M.S., Ph.D., Texas
- YOUNGBLOOD, TRACY P., *Instructor*, Outreach Program Office, 1996. B.A., Auburn
- ZALIK, RAYA, *Senior Academic Advisor* (Mechanical Engineering), 1979, 1988.
- ZALIK, RICHARD A., *Professor* (Mathematics), 1978, 1985. M.A., Buenos Aires; D.Sc., Israel Technion
- ZEANAH, CLYDE M., *Ext. Program Associate* (Adm.-Education), 1988. B.S., M.A., Alabama; Ed.D., Columbia
- ZEE, RALPH H., *Professor* (Mechanical Engineering), 1986, 1994. B.S., M.S., M.S., Ph.D., Wisconsin
- ZEHNDER, GEOFFREY W., *Associate Professor* (Entomology), 1991. Ph.D., California-Riverside
- ZENOR, PHILLIP L., *Professor* (Mathematics), 1983. B.S., M.S., Ph.D., Houston
- ZHANG, DAOWEI, *Assistant Professor* (Forestry), 1994. B.Sc., China; M.Sc., Beijing; Ph.D., British Columbia
- ZHANG, XIAO-XIN, *Research Associate* (Physics), 1996.
- ZHOU, XIAOPING, *Research Associate* (Forestry), 1994. M.S., Nanjing Forestry; M.B.A., Missouri
- ZIENERT, LUCRETIA A., *Adjunct Instructor* (Management), 1995. B.A., M.B.A., Auburn
- ZINNER, BERTRAM, *Associate Professor* (Discrete & Statistical Sciences), 1989, 1994. B.Sc., Darmstadt; Ph.D., Utah
- ZORR, PAUL A., *Professor* (Architecture), 1980, 1992. B.A., M.S., Illinois Inst. of Tech
- ZUK, GARY, *Professor* (Political Science), 1988, 1996. B.A., Canisius; M.S., Ph.D., Florida State
- ZUTTER, BRUCE R., *Senior Research Associate* (Forestry), 1987, 1990. B.S.F., Purdue; M.S., Virginia Tech.
- ZYLLA-JONES, ELIZABETH, *Clinical Instructor* (Communication Disorders), 1991, 1993. B.A., Pacific; M.S., Purdue

Emeriti

- ABNEY, LOUIS O., Professor Emeritus, Art, June 1988. B.A.A., M.A.A., Auburn
- ADAMS, FRED, Professor Emeritus, Agronomy & Soils, January 1985. B.S., M.S., LSU; Ph.D., California
- ADAMS, FREDERICK P., Associate Professor Emeritus, Management, January 1987. B.S.E.E., Auburn; B.S.I.M.T., MIT; M.B.A., Alabama; Ph.D., Florida State
- ALBERT ROOSEVELT A., JR., Professor Emeritus, Veterinary Ophthalmology, August 1988. D.V.M., M.S., Auburn
- ALEXANDER, HERMAN D., Associate Professor Emeritus, Zoology & Wildlife Science, June 1987. B.S., M.S., Ph.D., Auburn
- ALEXANDER, MILTON J., Professor Emeritus, Business, June 1993. B.S., Illinois; M.B.A., St. Louis; D.B.A., Georgia State
- ALFORD, WILLIAM L., Professor Emeritus, Physics, September 1991. B.A., Vanderbilt; M.S., Ph.D., Cal. Tech
- ALLEN, CONRAD M., Associate Professor Emeritus, Counselor Education, July 1983. B.A., Alabama; M.Ed., Ph.D., Sou. Mississippi
- ALLEN, ELIZABETH G., Associate Professor Emerita, Curriculum & Teaching, June 1989. B.A., Alabama; M.Ed., Ph.D., Sou. Mississippi
- ALLEN, WARD S., Hargis Professor Emeritus, English, June 1987. B.A., M.A., Ph.D., Vanderbilt
- ALLEN, WILLIAM H., JR., Professor Emeritus, Marketing & Transportation, December 1981. A.B., Centre; J.D., M.A., Alabama; B.D., Union Theological Seminary
- ALLEY, ALVIN D., Professor Emeritus, Curriculum & Teaching, June 1990. B.A., M.A., Ph.D., Florida State
- ALLISON, RAY, Associate Professor Emeritus, Fisheries & Allied Aquacultures, June 1983. B.S., W. Carolina; M.S., North Carolina State; Ph.D., LSU
- AMACHER, RICHARD E., Hargis Professor Emeritus, English, March 1984. A.B., Ohio; Ph.D., Pittsburgh
- AMLING, HARRY J., Professor Emeritus, Horticulture, March 1987. B.S., Rutgers; M.S., Delaware; Ph.D., Michigan State
- ANDELSON, ROBERT V., Professor Emeritus, Philosophy, June 1992. A.B., Chicago; A.M., Ph.D., Southern California
- ANTHONY, W. B., Professor Emeritus, Animal & Dairy Sciences, March 1980. B.S., Illinois; M.S., Texas A&M; Ph.D., Cornell
- ASKEW, RAYMOND F., Professor Emeritus, Physics, September 1995. B.S., Birmingham Southern; Ph.D., Virginia
- ATKINS, LEAH RAWLS, Director Emerita, Center for Arts and Humanities, September 1995. B.S., M.A., Ph.D., Auburn
- ATTLERBERGER, MARIE H., Professor Emerita, Microbiology, October 1986. D.V.M., M.S., Auburn; Ph.D., Alabama
- AUTREY, K. M., Professor Emeritus, Animal & Dairy Sciences, July 1976. B.S., LSU; M.S., Ph.D., Iowa State
- BAILEY, WILFORD S., President Emeritus, December 1986, & University Professor Emeritus, Pathobiology, October 1992. D.V.M., M.S., Auburn; Sc.D., Johns Hopkins
- BAKER, CLINTON A., Professor Emeritus, Marketing & Transportation, June 1993. B.S., Louisville; M.B.A., D.B.A., Indiana
- BAKER, J. MARSHALL, Professor Emeritus, Chemistry, June 1988. B.S., Missouri Valley; M.S., Ohio State; Ph.D., Missouri
- BAKER, RICHARD A., Professor Emeritus, Vocational and Adult Education, September 1995. B.S., M.Ed., Auburn; Ed.D., Oklahoma State
- BALCH, GEORGE TALMADGE, Extension Specialist Emeritus, Pesticide Education, September 1995. B.S., M.S., Auburn; J.D., Jones
- BALL, RICHARD W., Professor Emeritus, Mathematics, September 1988. B.A., M.A., Ph.D., Illinois
- BARKER, LARRY L., Professor Emeritus, Communications, September 1995. B.A., M.A., Ph.D., Ohio
- BARNES, PAT H., Vice President Emerita, Student Affairs, September 1995. B.S., Texas Woman's U; M.Ed., Ed.D., Auburn
- BEALS, HAROLD O., Associate Professor Emeritus, Forestry, August 1993. B.S., M.S., Ph.D., Purdue
- BEARD, ATHA A., Associate Professor Emerita, Accounting, September 1995. B.S., M.B.A., Auburn
- BECKETT, ROYCE E., Professor Emeritus, Mechanical Engr., June 1993. B.S., M.E., M.S., Illinois; Sc.D., Washington-St. Louis
- BECKETT, SIDNEY D., Associate Dean Emeritus, Research & Graduate Studies, Veterinary Medicine, April 1994. B.S., Mississippi State; D.V.M., M.S., Auburn; Ph.D., Missouri
- BELL, SIDNEY C., Professor Emeritus, Agric. Economics, October 1988. B.S., M.S., Auburn; Ph.D., Michigan State; J.D., Jones
- BELSER, THOMAS A., JR., Professor Emeritus, History, September 1989. B.A., M.A., Ph.D., Vanderbilt
- BENTLEY, CHARLES A., Associate Professor Emeritus, Music, September 1976. B.S.M., Baldwin-Wallace; M.A., Professional Diploma, "Specialist in Music Education"; Ed.D., Columbia
- BLACKBURN, JACK E., Associate Provost Emeritus and Professor Emeritus, Education, September 1994. B.S., Florida State; M.A., Peabody; Ed.D., New York
- BLAKE, GEORGE H., JR., Professor Emeritus, Zoology-Entomology, June 1983. B.S., M.S., Auburn; Ph.D., Illinois
- BLAKNEY, WILLIAM G., Associate Professor Emeritus, Industrial Engr., June 1990. B.S., Nova Scotia Tech.; M.Sc., Ohio State
- BLEVINS, WILLARD T., Associate Professor Emeritus, Microbiology, September 1995. B.S., Appalachian State; M.S., Ph.D., North Carolina State
- BOND, EVELYN B., Associate Professor Emerita, Vocational and Adult Education, June 1992. B.S., Berry; M.Ed., Auburn
- BOSTON, ROBERT O., Associate Professor Emeritus, Economics, September 1978. B.S., M.S., Alabama
- BOYLES, WILEY R., Professor Emeritus, Management, September 1995. B.S., Chattanooga; Ph.D., Tennessee
- BRADBERRY, GEORGE L., Executive Director Emeritus, Alumni & Development, September 1985. B.S., Georgia
- BRADLEY, BERT E., Professor Emeritus, Speech Communication, September 1989. A.B., Birmingham Southern; M.A., Alabama; Ph.D., Florida State
- BRAMLETT, GENE A., Director Emeritus, Center on Aging, September 1995. B.S., Murray State; M.S., Ph.D., Kentucky
- BRANDT, PAUL C., Professor Emeritus, Building Science, January 1993. B.S., M.S., Illinois
- BREYER, BERNARD R., Professor Emeritus, English, September 1985. B.A., Vanderbilt; M.A., LSU; Ph.D., Virginia
- BRITT, CHARLES R., Associate Professor Emeritus, Family and Child Development, January 1990. B.A., Birmingham Southern; M.Div., Vanderbilt; M.A., Scarit
- BRITTIN, NORMAN A., Professor Emeritus, English, June 1977. A.B., A.M., Syracuse, Ph.D., Washington
- BRITTIN, RUTH LOWE, Associate Professor Emerita, English, December 1986. B.S., M.A., Auburn
- BROWN, V. LAFERNE, Department Head Emeritus, Research Operations, Agricultural & Biological Science & Agricultural Experiment Station, June 1984. B.S., Mississippi State
- BUFORD, JAMES A., JR., Extension Management Scientist Emeritus, Coordinator Emeritus, Management Development, September 1995. B.S., M.S., Auburn; Ph.D., Georgia

- BURNETT, PAUL C., Professor Emeritus, Journalism, June 1979. B.A., Louisiana Tech; M.A., LSU
- BURNS, MOORE J., Professor Emeritus, Physiology & Pharmacology, March 1982. B.S., M.S., Auburn; Ph.D., Purdue
- BUSCH, RUTH C., Associate Professor Emerita, Sociology, September 1991. A.B., Cornell; M.A., Utah State; Ph.D., Arizona
- BUSSELL, WILLIAM H., Professor Emeritus, Mechanical Engr., June 1989. B.M.E., M.S.E., Florida; Ph.D., Michigan State
- BUTZ, ROBERT K., Professor Emeritus, Math-ACA, June 1988. B.S., Colorado State; M.S., Ph.D., Georgia
- CADENHEAD, A. KENNETH, Professor Emeritus, Curriculum & Teaching, June 1992. B.S., M.Ed., Georgia; Ed.D., Auburn
- CALLAN, ALLIE W., JR., Associate Professor Emeritus, Aerospace Engineering, June 1986. B.S., Maryland; M.S., George Washington
- CAMPBELL, LESLIE CAINE, Professor Emeritus, History and Journalism, and Associate Dean Emeritus, College of Liberal Arts, July 1992. B.S., Mississippi State; M.A., Ph.D., Mississippi
- CANNON, ROBERT Y., Professor Emeritus, Animal & Dairy Sciences, September 1982. B.S., Iowa State; M.S., Ohio State; Ph.D., Wisconsin
- CANTRELL, CLYDE HULL, Director Emeritus, Libraries, July 1977. A.B., M.A., A.B.L.S., North Carolina; Ph.D., Illinois
- CARGILE, GERTRUDE, Editor Emerita, University Relations, April 1984.
- CARR, HOWARD E., Professor Emeritus, Physics, January 1981. B.S., Auburn; M.A., Ph.D., Virginia
- CARRINGTON, THOMAS J., Professor Emeritus, Geology, April 1994. B.S., M.S., Kentucky; Ph.D., Virginia Tech
- CAVENDER, A. RAY, Associate Director Emeritus, ACES, October 1993. B.S., M.S., Tennessee; Ph.D., Wisconsin
- CHAMBLISS, OYETTE L., Professor Emeritus, Horticulture, September 1995. B.S., M.S., Auburn; Ph.D., Purdue
- CHAPMAN, LOUIE J., Professor Emeritus, Agronomy & Soils February, 1990. B.S., M.S., Auburn; Ph.D., Florida
- CHASTAIN, MARIAN, Associate Professor Emerita, Nutrition & Foods, June 1986. B.S., Cedar Crest; M.S., Ph.D., Florida State
- CLARK, CARL H., Professor & Head Emeritus, Physiology & Pharmacology, January 1992. B.S., D.V.M., Washington State; M.S., Ph.D., Ohio State
- CODY, REYNOLDS M., Associate Professor Emeritus, Botany & Microbiology, October 1991. B.A., Tennessee; M.S., Ph.D., Mississippi State
- COKER, SAMUEL T., Professor Emeritus, Pharmacal Sciences, July 1992. B.S., Auburn; M.S., Ph.D., Purdue
- CONNER, DIXIE F., Business Manager Emerita, Athletics, June 1994. B.A., Auburn
- CONNER, PAUL C., Director Emeritus, Athletic Facilities & Turf Management, November 1992. B.S., M.Ed., Auburn
- COOPER, BEN F., Dean Emeritus, Pharmacy, October 1987. A.B., B.S., M.S., Ph.D., North Carolina
- COOPER, JOHN R., Associate Professor Emeritus, Physics, June 1994. M.S., Ohio State; B.E.P., Ph.D., Auburn
- COPE, JOHN THOMAS, JR., Professor Emeritus, Agronomy & Soils, November 1984. B.S., M.S., Auburn; Ph.D., Cornell
- CORLEY, TOM EDWARD, Associate Dean Emeritus & Associate Director Emeritus, Agricultural Experiment Station, October 1984. B.S., M.S., Auburn
- COSS, ARTHUR F., Professor & Department Head Emeritus, Elementary Education, October 1981. B.E., N. Illinois; M.A., Northwestern; Ed.D., Indiana
- COX, J. GRADY, Professor Emeritus, Industrial Engineering, June 1992. B.S., M.S., Auburn; Ph.D., Purdue
- CRISS, ROBERT R., Associate Professor Emeritus, Accountancy, June 1993. B.B.A., M.B.A., L.L.B., J.D., Mississippi; LL.M., Alabama
- CURL, ELROY A., Professor Emeritus, Plant Pathology, October 1992. B.S., Louisiana Tech; M.S., Arkansas; Ph.D., Illinois
- CURRENT-GARCIA, ALVA, Associate Professor Emerita, Family & Child Development, September 1978. A.B., Randolph-Macon; M.S., Nebraska
- DANION, JAMES R., Professor Emeritus, Animal & Dairy Sciences, October 1990. B.S., M.S., Georgia; Ph.D., Auburn
- DANNER, MAURICE, Professor Emeritus, Agricultural Economics & Rural Sociology, November 1978. B.S., Texas Tech; M.S., Tennessee
- DARLING, CHARLES M., Professor Emeritus, Medicinal Chemistry, Associate Dean Emeritus, Pharmacy, September 1995. B.S., Ph.D., Mississippi
- DARON, HARLOW H., Professor Emeritus, Animal and Dairy Sciences, September 1995. B.S., Oklahoma; Ph.D., Illinois
- DAVIES, WILLIAM D., Professor Emeritus, Fisheries and Allied Aquacultures, September 1996. B.S., Purdue; M.S., Ohio State; Ph.D., North Carolina State
- DAVIS, DONALD E., Professor Emeritus, Botany, Plant Pathology & Microbiology, April 1982. B.Ed., Ph.D., E. Illinois; M.S., Ph.D., Ohio State
- DAVIS, NICHOLAS D., Professor Emeritus, Architecture, September 1995. B.A., B.Arch., Rice; M.F. Arch., Princeton
- DAVIS, NORMAN D., Professor Emeritus, Botany & Microbiology, June 1990. B.S., Georgia; M.S., Ph.D., Ohio State
- DECKER, HAROLD R., Associate Professor Emeritus, Aerospace Engr., January 1979. B.S. Ed., N.E. Missouri State; M. Litt. Pittsburgh
- DE MAINE, PAUL A. D., Professor Emeritus, Computer Science & Engineering, January 1995. B.S., Witwatersrand; Ph.D., British Columbia
- DeVALL, WILBUR B., Professor Emeritus, Forestry, February 1978. B.S., New York State Forestry; M.S., Florida
- DICKENS, RAY, Professor Emeritus, Agronomy and Soils, September 1995. B.S., Arkansas; M.S., Ph.D., Auburn
- DIENER, URBAN, Professor Emeritus, Plant Pathology, October 1987. B.A., Miami-Ohio; M.A., Harvard; Ph.D., North Carolina State
- DINIUS, ROBERT H., Associate Professor Emeritus, Chemistry, June 1992. B.S., Illinois Wesleyan; M.S., Missouri; Ph.D., Florida State
- DIORIO, DOROTHY M., Professor Emerita, Foreign Languages, June 1993. A.B., Bucknell; M.A., Middlebury; Ph.D., North Carolina
- DIXON, CARL, Associate Professor Emeritus, Zoology & Wildlife Science, September 1991. B.A., Colorado; Ph.D., Kansas State
- DOBIE, JAMES L., Professor Emeritus, Zoology & Wildlife Science, October 1996. B.S., Centenary; M.S., Ph.D., Tulane
- DOERSTLING, STEFFEN, Professor Emeritus, Architecture, January 1993. B.A., Munich; M.A., Ph.D., Stuttgart
- DONNAN, HUGH H., Professor Emeritus, Counseling & Counseling Psychology, April 1992. B.A., M.Ed., Furman; Ph.D., North Carolina
- DONNELLY, EDWARD D., Professor Emeritus, Agronomy & Soils, January 1984. B.S., M.S., Auburn; Ph.D., Cornell
- DOUY, HELEN IRENE, Associate Professor Emerita, Consumer Affairs, June 1986. B.S., M.S., Cornell; Ph.D., Florida State
- DOZIER, LESEL AB, Extension 4-H Specialist Emeritus, September 1995. B.S., M.Ed., Ph.D., Auburn
- DRAGOIN, ANTHONY, Associate Professor Emeritus, Health & Human Performance, June 1989. B.S., M.S., Auburn; Ed.D., Alabama

- DRAKE, JAMES BOB, Professor & Department Head Emeritus, Vocational and Adult Education, September 1995. B.S., M.Ed., Ed.D., Auburn
- DUFFIELD, FRANCES J., Associate Professor Emerita, Consumer Affairs, June 1990. B.S., Montana State; M.S., Virginia Tech.; Ph.D., Tennessee
- DUGGER, FOWLER, JR., Editor Emeritus, July 1987. B.A., Alabama; M.A., Duke
- DUMAS, WILLIAM T., Associate Professor Emeritus, Agricultural Engineering, October 1983. B.M., M.S., Auburn
- DUSI, JULIAN L., Professor Emeritus, Zoology and Wildlife Science, September 1992. B.S., M.S., Ph.D., Ohio State
- DYE, PATRICK F., Head Football Coach Emeritus, September 1994. B.S., Georgia
- EDGAR, SAMUEL, Professor Emeritus, Poultry Science, July 1986. A.B., Sc.D., Sterling; M.S., Kansas State; Ph.D., Wisconsin
- EDMONDS, CHARLES III, Professor Emeritus, Finance, September 1995. B.A., M.S.A., Auburn; Ph.D., Arkansas
- ELLISOR, MILDRED R., Professor Emerita, Elementary Education, June 1978. A.B., Huntington; M.A., Ed.D., Columbia
- ENSMINGER, LEONARD E., Professor Emeritus, Agronomy & Soils, January 1979. B.S., Missouri; Ph.D., Illinois
- EVANS, CLYDE E., Professor Emeritus, Agronomy & Soils, April 1992. B.S., Abilene Christian; M.S., Auburn; Ph.D., North Carolina State
- EVANS, EMERSON M., Associate Professor Emeritus, Agronomy & Soils, October 1983. B.S., Auburn; M.S., Cornell
- FEASTER, WILLIAM M., Professor Emeritus, Electrical Engineering, October 1988. B.S.E.E., M.S.E.E., Auburn
- FITZPATRICK, BEN, Professor Emeritus, Mathematics, July 1992. B.S., Auburn; M.A., Ph.D., Texas
- FITZPATRICK, MARY P., Associate Professor Emerita, Health, Physical Education & Recreation, July 1984. B.S., Middle Tennessee State; M.A., Ed.D., Peabody
- FITZPATRICK, PHILIP M., Professor Emeritus, Mathematics, May 1982. B.S., M.S., Ph.D., Oklahoma
- FLUKER, BILLIE, Associate Professor Emeritus, Mechanical Engr., June 1987. B.S.E.E., M.S.M.E., Texas A&M; Ph.D., Tulane
- FORD, HAYDEN T., JR., Professor Emeritus, Health & Human Performance, September 1996. B.S., M.S., Jacksonville State; Ed.D., Georgia
- FORTENBERRY, CHARLES N., Professor Emeritus, Political Science, July 1979. B.A., M.A., Mississippi; Ph.D., Illinois
- FOURIER, ARTHUR E., Professor Emeritus, Health, Physical Education & Recreation, November 1982. B.S., Illinois; M.A., Ph.D., Peabody
- FOY, JAMES E., Dean Emeritus, Student Affairs & Professor Emeritus, Counselor Education, April 1978. A.B., M.A., Alabama; Ph.D., Michigan State
- FRANCIS, WILLIAM HUGH, Professor Emeritus, Technical Services, June 1971. B.S., M.S., Auburn
- FREEMAN, JOHN D., Associate Professor Emeritus, Botany, September 1995. B.A., Austin Peay; Ph.D., Vanderbilt
- FRENCH, FRANCES C., Associate Professor Emerita, Sociology, Anthropology & Social Work, September 1992. B.A., M.S., LSU; J.D., Jones
- FRENCH, JOHN C., Professor Emeritus, Entomology, March 1991. B.S., M.S., Auburn; Ph.D., Clemson
- FUNCHESS, LINWOOD E., Director Emeritus, Buildings & Grounds, July 1977. B.S., Auburn; M.S., Cornell
- GALBRAITH, RUTH L., Dean Emerita, Human Sciences & Professor Emerita, Consumer Affairs, September 1985. B.S., Ph.D., Purdue
- GARRETT, PHILLIP D., Associate Professor Emeritus, Anatomy and Histology, September 1995. B.S., D.V.M., M.S., Missouri
- GEIGER, GRADY E., Librarian III Emeritus, Ralph Brown Draughon Library, May 1994. B.S., Auburn; M.L.S., Michigan
- GIBBS, ROBERT C., Assistant University Librarian & Librarian III Emeritus, October 1992. A.B., Duke; M.S.L.S., North Carolina
- GIBSON, J. TYRONE, Associate Professor Emeritus, Pharmacy Care Systems, September 1995. B.S., M.S., Georgia; Ph.D., Mississippi
- GOODLING, JOHN S., Professor Emeritus, Mechanical Engineering, June 1996. B.S.E., M.S.E., Ph.D., Florida
- GOODMAN, JOHN G., Associate Professor Emeritus, Poultry Science, August 1973. B.S., M.S., Auburn
- GOODWIN, GEORGE R., Associate Professor Emeritus, Management, June 1979. B.S., Florida; M.S., George Washington
- GRAF, EDWARD R., Professor Emeritus, Electrical Engineering, January 1987. B.E.E., M.E.E., Auburn; Ph.D., Stuttgart
- GRAVES, RICHARD L., Professor Emeritus, Curriculum and Teaching, September 1995. B.A., Baylor; M.Ed., Florida; Ph.D., Florida State
- GRAY, BRUCE W., Professor Emeritus, Anatomy and Histology, September 1996. D.V.M., Ph.D., Cornell
- GREENLEAF, WALTER H., Professor Emeritus, Horticulture, February 1982. B.S., Ph.D., California
- GREENSHIELDS, CHARLES M., Associate Professor Emeritus, Educational Foundations, Leadership & Technology, June 1990. B.A., M.A., Ph.D., Michigan State
- GROTH, AARON H., JR., Professor Emeritus, Pathobiology, January 1993. B.S., D.V.M., Auburn; M.S., Iowa State
- GUDAUSKUS, ROBERT T., Professor Emeritus, Plant Pathology, October 1993. B.S., East Illinois; M.S., Ph.D., Illinois
- GUERIN, WILLIAM H., Campus Planner & University Architect Emeritus, January 1982. B.Arch., Florida
- HAEK, BENJAMIN F., Professor Emeritus, Agronomy and Soils, September 1995. B.S., Texas A&M; M.S., Ph.D., Auburn
- HALE, DENNIS, Associate Professor Emeritus, Accounting & Finance, June 1985. B.S., Middle Tennessee State; M.A., Peabody
- HALE, FRANCES W., Associate Professor Emerita, Vocational & Adult Education, June 1982. B.S., Troy State; M.A., Peabody
- HALL, DAVID M., Professor Emeritus, Textile Engr., September 1995. B.S., Auburn; M.S., Clemson; Ph.D., Victoria (England)
- HARRIS, HUBERT, Associate Professor Emeritus, Horticulture, March 1976. B.S., M.S., Auburn
- HARRIS, RALPH R., Professor and Head Emeritus, Animal and Dairy Sciences, September 1995. B.S., M.S., Auburn; Ph.D., Texas A&M
- HARRISON, A. CLEVELAND, Professor Emeritus, Theatre, September 1991. B.S., M.A., Ohio State; M.A., Arizona; Ph.D., Kansas
- HARRISON, JOSEPH H., JR., Professor Emeritus, History, September 1988. B.A., M.A., Ph.D., Virginia
- HARTMAN, MAURICE A., Professor Emeritus, Accounting & Finance, June 1981. B.S., High Point; M.S., North Carolina; M.B.A., Texas
- HARTWIG, CHESTER W., Professor Emeritus, Sociology & Anthropology, January 1977. B.S., M.A., Ph.D., Wisconsin
- HATFIELD, DONALD G., Professor Emeritus, Art, June 1994. B.A., M.A., Michigan State; M.F.A., Wisconsin
- HAYHURST, DONALD E., Professor Emeritus, Political Science, September 1988. A.B., M.Litt., Ph.D., Pittsburgh

- HAYNES, L. J., Professor Emeritus, Technical Services, Director Emeritus, Ind. Lab., October 1978. B.S., M.S., Auburn; Ed.D., Bradley
- HAWKINS, GEORGE E., Professor Emeritus, Animal & Dairy Sciences, October 1982. B.S., W. Kentucky; M.S., Georgia; Ph.D., North Carolina State
- HAWSEY, LAWRENCE S., Extension Leader Emeritus, Programs and Events, September 1995. B.S., M.Ed., Auburn; Ed.S., Mississippi State
- HELMKE, HENRY C., Associate Professor Emeritus, Foreign Languages, June 1993. B.A., M.A., Duke; Ph.D., Ohio State
- HENDERSON, JOHN B., Professor Emeritus, Agronomy & Soils, January 1995. B.S., M.S., Auburn; Ph.D., North Carolina State
- HENLEY, ATHA LOUISE, Librarian III Emerita, September 1995. B.A., Missouri Valley; M.L.S., California-Berkeley
- HENRY, JOHN F., Professor Emeritus, Management, January 1986. B.I.M., Auburn; M.S.I.M., Georgia Tech; Ph.D., Alabama
- HENSON, CURTIS T., Professor Emeritus, History, July 1993. B.A., M.A., Auburn; Ph.D., Tulane
- HERRING, BRUCE E., Professor Emeritus, Industrial Engineering, September 1995. B.I.E., Ohio State; M.S.M.E., New Mexico State; Ph.D., Oklahoma State
- HIERS, CHARLES J., Professor Emeritus, Art, June 1988. B.A.A., M.A.A., Auburn
- HILTBOLD, ARTHUR E., Professor Emeritus, Agronomy & Soils, July 1991. B.S., Ph.D., Cornell; M.S., Iowa State
- HINTON, MARJORIE J., Associate Professor Emerita, Family & Child Development, June 1984. B.S., Alabama; M.S., Auburn
- HINTON, WILBUR, Professor Emeritus, Music, July 1984. B.M., M.A., Ed.D., Alabama
- HIRTH, LEO J., Professor Emeritus, Chemical Engineering, January 1990. B.S., CCNY; M.S., Ph.D., Texas
- HOBBS, EDWARD H., Dean Emeritus, Arts & Sciences, & Professor Emeritus, Political Science, October 1986. A.B., North Carolina; M.A., Alabama; Ph.D., Harvard
- HOBBS, MARLEAH K., Associate Professor Emerita, Art, June 1988. B.F.A., Colorado; M.F.A., Mississippi
- HOCKING, GEORGE M., Professor Emeritus, Pharmacy, September 1975. B.S.P., Washington; M.S.P., Ph.D., Florida
- HODSON, NORMA, Professor Emerita, Family & Child Development, September 1976. B.S., Butler; M.S., Ph.D., Florida State
- HOFF, EDWIN J., Associate Professor Emeritus, Pathology, October 1983. D.V.M., Cornell; M.S., Pennsylvania
- HOLLEY, BETTY B., Extension Specialist Emerita, 4-H Program, September 1995. B.S., Tennessee; M.S., Alabama; Ed.D., Auburn
- HOLLOWAY, CLARKE L., Professor Emeritus, Anatomy & Histology, July 1988. D.V.M., M.S., Auburn; Ph.D., Iowa State
- HONNELL, MARTIAL A., Professor Emeritus, Electrical Engineering, July 1981. B.S.E.E., M.S.E.E., E.E., Georgia Tech
- HOOD, JOSEPH T., Professor Emeritus & Department Head Emeritus, Agronomy & Soils, October 1986. B.S., Georgia; M.S., Purdue; Ph.D., Cornell
- HORNE, ROBERT D., Professor Emeritus, Small Animal Surgery & Medicine, September 1994. D.V.M., M.S., Auburn
- HSU, ANDREW, Professor Emeritus, Chemical Engr., June 1986. B.S.C., Nanking; M.S., Wisconsin; Ph.D., Pennsylvania
- HUDDLESTON, NORMAN R., Associate Professor Emeritus, Agricultural Economics & Rural Sociology, September 1990. B.S., Tennessee Tech.; M.S., Tennessee; Ph.D., Mississippi State
- HUDSON, FRED M., Professor Emeritus, Civil Engineering, December 1980. B.S.C.E., Purdue; M.S., Princeton
- HUDSON, ROBERT S., Alumni Professor Emeritus, Large Animal Surgery & Medicine, June 1989. D.V.M., Oklahoma State; M.S., Auburn
- HUDSON, SARA A., Associate Professor Emerita, English, September 1986. A.B., North Carolina; M.A., Ph.D., Chicago
- HUFFMAN, DALE L., Professor Emeritus, Animal and Dairy Sciences, Director Emeritus, Food Technology Institute, September 1995. B.S., Cornell; M.S., Ph.D., Florida
- IKENBERRY, ERNEST, Professor Emeritus, Mathematics, June 1975. B.A., Ottawa; M.S., Kansas; Ph.D., LSU
- IRVINE, LAVERNE F., Associate Professor Emeritus, Psychology, September 1986. B.M., B.A., La. Tech; M.A., Ph.D., Stanford
- IVEY, WILLIAM D., Associate Professor Emeritus, Zoology-Entomology, September 1985. B.S., M.S., Auburn; Ph.D., Emory
- JEMIAN, WARTAN A., Professor Emeritus, Mechanical Engr., December 1993. B.S., Maryland; M.S., Ph.D., Rensselaer Poly
- JENKINS, STEPHEN R., Professor Emeritus, Civil Engineering, September 1995. B.S.C.E., Georgia Tech; M.S., Ph.D., Harvard
- JOHNSON, EVERT W., Professor Emeritus, Forestry, July 1986. B.S., New Hampshire; M.F., Yale; Ph.D., Syracuse
- JOHNSON, FREDERIC A., Associate Professor Emeritus, June 1992. B.S., M.S., New Hampshire; Ph.D., Wisconsin
- JOHNSON, GERALD W., Professor Emeritus, Political Science, September 1995. B.A., Marshall; M.A., Ph.D., Tennessee
- JOHNSON, LEWIS WARREN, Associate Professor Emeritus, Poultry Science, July 1992. A.B., Cornell; M.S., Auburn; Ph.D., Texas A&M
- JOHNSON, ROBERT E., Associate Professor Emeritus, Curriculum and Teaching, September 1995. B.M.E., M.M.E., Kansas; Ph.D., Michigan
- JOHNSON, W. A., Associate Professor Emeritus, Horticulture, January 1975. B.S., M.S., Auburn
- JOHNSON, WILEY C., Professor Emeritus, Agronomy & Soils, May 1992. B.S., Wake Forest; B.S., M.S., North Carolina State; Ph.D., Cornell
- JONES, ALLEN W., Professor Emeritus, History, September 1991. B.S., M.A., Auburn; Ph.D., Alabama
- JONES EDWARD O., Professor Emeritus, Mechanical Engineering, June 1992. B.S.M.E., B.S.E.E., Auburn; M.S.M.E., Illinois
- JONES, ETHEL B., Professor Emerita, Economics, July 1996. A.B., Vassar; M.A., Ph.D., Chicago
- JONES, MADISON P., Professor Emeritus, English, and University Writer-in-Residence Emeritus, June 1987. A.B., Vanderbilt; M.A., Florida
- JUSTICE, ERNEST, Associate Professor Emeritus, Curriculum & Teaching., April 1983. B.M.E., Kansas STC; M.S., Ph.D., Wisconsin
- KAPLAN, BARBARA C., Professor Emerita, Curriculum & Teaching., June 1990. B.A., Agnes Scott; M.A., Eastman; M.A., S. Florida; Ph.D., Florida State
- KELLEY, VIRGINIA C., Associate Professor Emerita, Botany & Microbiology, July 1994. A.B., LaGrange; M.S., Ph.D., Auburn
- KELLEY, WALTER D., Professor Emeritus, Forestry, April 1994. B.S., M.S., Auburn; Ph.D., North Carolina State
- KERN, EDWARD E., JR., Professor Emeritus, Economics, January 1988. B.S., M.S., LSU; Ph.D., Kentucky
- KINCEY, TRULY, Professor Emerita, Economics, September 1979. A.B., Montevallo; M.A., Tulane; Ph.D., Ohio State

- KING, CHARLES COOPER, JR., Professor Emeritus, Agronomy & Soils, October 1986. B.S., M.S., Auburn; Ph.D., North Carolina State
- KINZER, EARL T., Associate Professor Emeritus, Physics, June 1993. B.E.P., M.S., Auburn; Ph.D., Virginia
- KITELEY, GARY W., Associate Professor Emeritus, Aerospace Engineering, June 1990. B.S., Minnesota; M.S., Purdue
- KOUSKOLEKAS, COSTAS A., Associate Professor Emeritus, Entomology, January 1994. B.S., Thessaloniki; M.S., Missouri; Ph.D., Illinois
- KRIBS, ANNA E., Librarian III Emerita, September 1976. A.B., Louisiana Tech; M.S.L.S., LSU
- LAND, JAMES E., Professor Emeritus, Chemistry, June 1975. B.S., Clemson; M.S., Tulane; Ph.D., North Carolina
- LARSEN, HARRY S., Associate Professor Emeritus, Forestry, July 1991. B.S., Rutgers; M.S., Michigan State; Ph.D., Duke
- LATHAM, ARCHIE J., Associate Professor Emeritus, Plant Pathology, September 1994. B.S., Idaho State; M.S., Idaho; Ph.D., Illinois
- LATIMER, MARGARET K., Associate Professor Emerita, Political Science, June 1992. B.A., Agnes Scott; M.A., Vanderbilt
- LATIMER, PAUL H., Professor Emeritus, Physics, June 1992. B.S., Northwestern; M.S., Ph.D., Illinois
- LAWRENCE, FAYE B., Associate Professor Emerita, Zoology & Wildlife Science, June 1989. B.A., Huntingdon; M.S., Auburn
- LAYFIELD, MARY, Associate Professor Emerita, Family & Child Development, June 1986. B.S., M.S., M.S.Ed., Ed.D., Auburn
- LEDBETTER, WILLIAM N., Associate Professor Emeritus, Management, June 1991. B.S.I.E., Alabama; M.S., Georgia Tech; Ph.D., Oklahoma State
- LEISCHUCK, EMILY REAVES, Assistant to the President and Board of Trustees Emerita, September 1995. B.S., Alabama; M.Ed., Auburn
- LEISCHUCK, GERALD S., Executive Assistant to the President and Secretary to the Board of Trustees Emeritus, April 1997. A.B., M.A., N. Colorado; Ed.D., Auburn
- LINDHOLM, BYRON W., Associate Professor Emeritus, Family and Child Development, September 1995. B.A., Northwestern; Ph.D., Illinois
- LITTLE, ALTON S., Associate Professor Emeritus, Technical Services, July 1977. B.C.E., Auburn; M.S.C.E., Georgia Tech
- LITTLETON, TAYLOR D., Mosley Professor Emeritus, English, September 1995. B.S., M.S., Ph.D., Florida State
- LIVERMAN, JOHN HUBERT, Professor Emeritus, Music, June 1980. B.S., M.A., Columbia
- LIVINGSTON, KNOX, Associate Professor Emeritus, Forestry, January 1978. B.S., South Carolina; M.F., Duke
- LOGUE, HANCHEY E., JR., Professor Emeritus, Journalism, July 1993. B.S., M.A., Auburn
- LOWRY, JAMES L., Professor Emeritus, Electrical Engineering, September 1995. B.E.E., M.E., Auburn; Ph.D., Florida
- LYLE, EVERETT S., JR., Associate Professor Emeritus, Forestry, January 1986. B.S., Georgia; M.F., Duke; Ph.D., Auburn
- MAEHL, WILLIAM H., Professor Emeritus, History, June 1981. B.Sc., M.A., Northwestern; Ph.D., Chicago
- MARSHALL, NORTON L., Professor Emeritus, Botany & Microbiology, June 1988. B.S., Penn State; M.S., Ph.D., Maryland
- MARTIN, DAVID L., Professor Emeritus, Political Science, January 1997. B.A., Redlands; M.A., Ph.D., Claremont
- MARTIN, FRED W., Professor Emeritus, Aerospace Engineering, September 1985. B.S.A.E., M.S., Ph.D., Virginia Tech
- MARTIN, JAMES E., President Emeritus, August 1993. B.S., Auburn; M.S., North Carolina State; Ph.D., Iowa State
- MARTIN, JOHN, Associate Professor Emeritus, Educational Leadership, December 1988. B.S., Ed.D., Auburn; M.A., Alabama
- MARTY, EDWARD C., Professor Emeritus, Building Tech., June 1972. B. Arch., M.Arch., Auburn
- McCLUNG, JAMES D., Associate Professor Emeritus, Engineering Graphics & Technical Services, June 1979. B.S., Ed.M., Oklahoma
- McGUIRE, JOHN A., Professor Emeritus, Botany & Microbiology, October 1993. B.S., M.S., Mississippi State; Ph.D., Auburn
- McGUIRE, ROBERT L., Professor Emeritus, Animal & Dairy Sciences, August 1994. B.S., M.S., North Carolina State; Ph.D., Kentucky
- McKOWN, DELOS B., Professor and Head Emeritus, Philosophy, September 1995. B.A., Alma; B.D., Lexington Theo.; M.A., Kentucky; Ph.D., Florida State
- McPHEETERS, E. KEITH, Professor Emeritus & Dean Emeritus, Architecture, June 1989. B.Arch., Oklahoma; M.F.A., Princeton
- MEADOWS, MARK E., Professor & Department Head Emeritus, Counseling & Counseling Psychology, January 1995. B.S., Georgia Southern; M.A., Peabody; Ed.D., Georgia
- MEANS, RICHARD, Professor Emeritus, Health & Human Performance, October 1989. B.S., M.A., Minnesota; Ed.D., UCLA
- MELIUS, PAUL, Professor Emeritus, Chemistry, June 1991. B.S., Bradley; M.S., Chicago; Ph.D., Loyola
- MILLER, THOMAS, Associate Professor Emeritus, Educational Media, June 1987. B.S., Berry; M.S., Stout State; Ed.D., Indiana
- MILLMAN, MARY M., Associate Professor Emerita, Foreign Languages, June 1994. A.B., Michigan; M.A., East Michigan; M.A., New York; Ed.D., Georgia
- MILLMAN, RICHARD G., Professor Emeritus, Architecture, October, 1989. B.Arch., M.Arch., Michigan
- MILTON, JAMES L., Professor Emeritus, Small Animal Surgery & Medicine, January 1995. D.V.M., M.S., Auburn
- MOLTZ, FRED J., Professor Emeritus, Civil Engineering, September 1995. B.S., M.S.C.E., Drexel; Ph.D., Stanford
- MONTGOMERY, ROBERT W., Professor Emeritus, Vocational & Adult Education, July 1980. B.S., M.S., Auburn; Ph.D., Ohio State
- MOORE, CLAUDE H., Professor Emeritus, Poultry Science, July 1989. B.S., Auburn; M.S., Kansas State; Ph.D., Purdue
- MOORE, E. B., JR., Professor Emeritus, Education Administration, September 1978. A.B., M.B.A., Syracuse; Ed.D., Florida
- MOORE, JANE B., Professor Emerita, Health and Human Performance, September 1996. B.A., Judson; M.S., Tennessee; Ed.D., Alabama
- MOORE, OMAR C., Associate Professor Emeritus, Chemical Engineering, September 1969. B.S., M.S., Auburn
- MOORE, WAYNE T., Professor and Canon Emeritus, Music, September 1995. A.B., Elon; A.M., Ed.D., Columbia
- MORACCO, JOHN C., Professor Emeritus, Counseling and Counseling Psychology, September 1995. B.S., SUNY; M.A., Arizona State; Ph.D., Iowa
- MORGAN, ALICE S., Associate Professor Emerita, Vocational and Adult Education, December 1986. B.S., Southern Mississippi; M.A., Alabama; Ed.D., Auburn
- MORGAN, HORACE C., JR., Associate Dean Emeritus, Veterinary Medicine, October 1993. D.V.M., M.S., Auburn
- MORGAN, LAURENCE S., Associate Professor Emeritus, Music, June 1985. B.M., Alabama; M.A., Columbia
- MORGAN, THOMAS E., Professor Emeritus, Educational Foundations, Leadership and Technology, June 1994. B.S., Austin Peay; M.S., Ph.D., Tennessee
- MORGAN, WILLIAM W., Professor Emeritus, Industrial Engineering, January 1982. B.B.A., Georgia; M.S., Georgia Tech

- MOSS, DONOVAN D., Professor Emeritus, Fisheries and Allied Aquacultures, March 1989. B.S., M.S., Auburn; Ph.D., Georgia
- MOUNT, ROBERT H., Professor Emeritus, Zoology and Entomology, September 1986. B.S., M.S., Auburn; Ph.D., Florida
- MYLES, WILLIAM R., Associate Professor Emeritus, Management, September 1977. B.S., M.A., Pittsburgh
- NEWTON, DAVID S., Associate Professor Emeritus, Pharmacy Care Systems; Assistant Dean Emeritus, Pharmacy, September 1995. B.B.A., B.S., M.B.A., Ph.D., Mississippi
- NEWTON, WESLEY P., Professor Emeritus, History, September 1987. A.B., Missouri; M.A., Ph.D., Alabama
- NICHOLS, JAMES O., Associate Professor Emeritus, Aerospace Engineering, July 1993. B.S.A.E., M.S.E., Ph.D., Alabama
- NIST, JOAN S., Professor Emerita, Educational Foundations, Leadership and Technology, June 1992. A.B., Lawrence; M.A., Indiana; Ed.D., Auburn
- NOLAND, RONALD G., Associate Professor Emeritus, Curriculum and Teaching, September 1991. B.S., M.Ed., LSU; Ed.D., Southern Mississippi
- NORTON, JOSEPH DANIEL, Professor Emeritus, Horticulture, September 1995. B.S., M.S., Auburn; Ph.D., LSU
- O'BRIEN, J. FRED, Director Emeritus, Engineering Extension, October 1992. B.M.E., M.M.E., Auburn
- OVERSTREET, ROBERT., Professor Emeritus, Communication, June 1991. A.B., N. Georgia; M.A., Northwestern; Ph.D., LSU
- OWSLEY, FRANK L., JR., Professor Emeritus, History, September 1995. B.A., Vanderbilt; M.A., Ph.D., Alabama
- PATTERSON, RICHARD M., Professor Emeritus, Botany, Plant Pathology and Microbiology, April 1985. B.S., M.S., Florida; Ph.D., Penn. State
- PATTERSON, TROY B., JR., Professor Emeritus, Animal and Dairy Sciences, March 1986. B.S., Mississippi State; M.S., Ph.D., Texas A&M
- PEAK, J. HUNTER, Professor Emeritus, Foreign Languages, June 1984. A.B., Hampden-Sydney; M.A., Ph.D., North Carolina
- PEARSON, ALLEN M., Professor Emeritus, Zoology-Entomology, December 1971. B.S., Auburn; M.S., Ph.D., Iowa State
- PEET, HELEN H., Librarian III Emerita, July 1976. B.A., Mississippi Woman's College; M.A., Tulane
- PENDERGAST, PATRICK F., Associate Professor Emeritus, Political Science, December 1992. B.S., John Jay; M.P.S., Auburn
- PERKINS, WARREN S., Professor Emeritus, Textile Engineering, June 1994. B.S., M.S., Clemson
- PERRY, FREDERICK B., JR., Associate Professor Emeritus, Horticulture, May 1988. B.S., M.S., Auburn; Ph.D., Georgia
- PERRY, NORMAN, Professor Emeritus, Mathematics, September 1977. A.B., California; M.A., Ph.D., Georgia
- PERSONS, CAROLINE C., Librarian III Emerita, July 1981. A.B., Mississippi U. for Women; B.S.L.S., Peabody
- PETERSON, JOSEPH G., Associate Professor Emeritus, Chemistry, July 1981. B.S., M.S., Auburn
- PFEIL, EVA, Professor Emerita, Industrial Design, June 1988. B.I.D., M.V.C., Uim Graduate School of Design; Certificate Psychology, Zurich; Ph.D., Walden
- PHILLIPS, CHARLES L., Professor Emeritus, Electrical Engineering, October 1987. B.E.E., M.S.E.E., Ph.D., Georgia Tech
- PHILLIPS, PHYLLIS P., Associate Professor Emerita, Speech Pathology, June 1983. B.S., M.Ed., Ed.D., Auburn
- PHILLIPS, RAY C., Professor Emeritus, Educational Leadership, October 1982. B.S., Middle Tennessee State; M.A., Peabody; Ed.D., Auburn
- PHILPOTT, HARRY M., President Emeritus, June 1980. A.B., LL.D. (Hon.), Washington & Lee; Ph.D., Yale; D.D. (Hon.), Stetson; LL.D. (Hon.), Florida; LL.D. (Hon.), Alabama; H.H.D. (Hon.) Sanford; L.H.D. (Hon.), Auburn
- POSNIAK, ALEXANDER R., Associate Professor Emeritus, Foreign Languages, September 1981. B.A., Maryland; M.S., George Washington
- POWERS, ROBERT D., Professor Emeritus, Pathology, September 1995. B.S., Tennessee; D.V.M., Auburn; Ph.D., Tennessee Medical Units
- PRATHER, EDMUND E., Associate Professor Emeritus, Fisheries and Allied Aquacultures, January 1984. B.S., Auburn; M.S., Michigan
- PUCKETT, JOHN R., Professor Emeritus, Health and Human Performance, September 1993. B.S., East Tennessee State; M.S., Ed.D., Tennessee
- PURCELL, MARY LOU G., Professor Emerita, Family and Child Development, September 1988. B.A., Yankton; M.A., Ed.D., Columbia
- REA, ROBERT R., Professor Emeritus, History, June 1992. B.A., Friends; M.A., Ph.D., Indiana
- REDDING, RICHARD W., Professor Emeritus, Physiology and Pharmacology, May 1985. D.V.M., M.Sc., Ph.D., Ohio State
- RENOLL, ELMO S., Professor Emeritus, Agricultural Engineering, October 1982. B.S., Auburn; M.S., Iowa State
- RICHARDSON, DON R., Professor Emeritus, Communication, August 1991. B.A., Auburn; M.A., Ph.D., Ohio State
- RIDGEWAY, LARRY D., Assistant Vice President Emeritus, Student Affairs, September 1995. B.S., M.A., South Alabama
- RILEY, RHETT E., Vice President Emeritus, Business & Finance & Treasurer, July 1993. B.S., Auburn
- RITLAND, RAYMOND W., Professor Emeritus, Economics, June 1972. B.S.C., M.A., Ph.D., Iowa
- ROBERTS, CHARLES S., Professor Emeritus, Pathology and Parasitology, August 1977. D.V.M., Auburn; M.S., Michigan State
- ROBERTSON, BENJAMIN THOMAS, Professor Emeritus, Veterinary Medicine, October, 1993. B.S., Kentucky; D.V.M., M.S., Auburn
- ROBERTSON, FRED R., Vice President Emeritus, Extension & Professor Emeritus, Political Science, June 1978. B.S., M.S., Tennessee; Dr.P.A., Harvard
- ROBINSON, CECIL E., Associate Professor Emeritus, Mathematics, January 1991. B.S., Auburn; M.A., Ph.D., Alabama
- ROCHESTER, EUGENE W., JR., Associate Professor Emeritus, Agricultural Engineering, February 1997. B.S., Clemson; M.S., Ph.D., North Carolina State
- ROGERS, CHARLES M., Associate Professor Emeritus, Psychology, September 1985. B.A., Lafayette; Ph.D., Yale
- ROGERS, HOWARD, Professor Emeritus, Agronomy and Soils, April 1976. B.S., Virginia Tech; M.S., Michigan State; Ph.D., Iowa State
- ROGERS, WILMER A., Professor and Head Emeritus, Fisheries and Allied Aquacultures, September 1995. B.S., Southern Mississippi; M.S., Ph.D., Auburn
- ROLLINS, GILBERT H., Associate Professor Emeritus, Animal and Dairy Sciences, July 1981. B.S., M.S., Virginia Tech; Ph.D., Illinois
- ROSE, CHARLES S., Associate Professor Emeritus, English, June 1994. A.B., M.A., Ph.D., Vanderbilt
- ROSEN, MELVIN, Associate Professor and Head Track Coach Emeritus, Health and Human Performance, September 1991. B.S., M.S., Iowa

- ROSSI, CHARLES R., Professor Emeritus, Veterinary Medicine, September 1993. B.S., D.V.M., Ph.D., Illinois; M.S., Ohio State
- ROUSE, R. DENNIS, Dean Emeritus, Agriculture, Forestry and Biological Science & Director Emeritus, Agricultural Experiment Station, September 1981. B.S., M.S., Georgia; Ph.D., Purdue
- RUFFIN, BURLSON G., Associate Professor Emeritus, Animal and Dairy Sciences, September 1995. B.S., M.S., Mississippi State; Ph.D., Auburn
- RUSSELL, DALLAS W., Professor Emeritus, Electrical Engineering, October 1987. B.S.E.E., M.S., Tennessee; Ph.D., Florida
- RYMAL, KENNETH S., Professor Emeritus, Horticulture, December 1987. B.S., MIT; M.S., Florida; Ph.D., Georgia
- SAMFORD, THOMAS D., III, General Counsel Emeritus, July 1995. A.B., Princeton; J.D., Alabama
- SANDERS, JAMES W., Associate Professor Emeritus, Speech Communication, June 1985. B.A., Tampa; B.A., M.A., Florida
- SANDERSON, KENNETH C., Professor Emeritus, Horticulture, September 1994. B.S., Cornell; M.S., Ph.D., Maryland
- SCARBOROUGH, C. CAYCE, Professor Emeritus, Vocational and Adult Education, September 1979. B.S., M.S., Auburn; Ed.D., Illinois
- SCARBOROUGH, JOHN L., Associate Professor Emeritus, Mechanical Engineering, January 1985. B.S.A.E., M.S.M.E., Auburn; M.S., Alabama
- SCARSBROOK, CLARENCE E., Professor Emeritus, Agronomy and Soils, October 1978. B.S., Auburn; Ph.D., North Carolina State
- SCEBRA, J. BOYD, Associate Dean Emeritus, Education, December 1989. B.S., M.A., Austin Peay; Ed.D., Auburn
- SCHAEFER, WALTER, Professor Emeritus, Industrial Design, June 1992. B.A.A., Beme; M.I.D., Ulm; Ph.D., Walden
- SCHELL, FRED G., Professor Emeritus, Large Animal Surgery and Medicine, February 1974. D.V.M., Auburn
- SCHMITTOW, HOMER R., Professor Emeritus, Fisheries and Allied Aquacultures, April 1991. B.S., Tennessee Tech; M.S., Ph.D., Auburn
- SELF, RAYMOND L., Professor Emeritus, Plant Pathology, April 1981. B.S., M.S., Auburn; Ph.D., Wisconsin
- SELMAN, JAMES W., Associate Professor Emeritus, Vocational and Adult Education, September 1995. B.S., M.S., Ed.D., Florida State
- SFORZINI, RICHARD H., Professor Emeritus, Aerospace Engineering, July 1985. B.S., West Point; M.E., MIT
- SHELL, E. WAYNE, Professor Emeritus, Fisheries and Allied Aquacultures, February 1994. B.S., M.S., Auburn; Ph.D., Cornell
- SHERLING, WILLIAM, Associate Professor Emeritus, Aerospace Engineering, October 1980. B.A.E., Auburn; M.S.A.E., Georgia Tech
- SHIELDS, ALAN J., Associate Professor Emeritus, Sociology, September 1989. B.A., M.A., N. Texas State
- SIMMS, JOHN D., Professor Emeritus, Journalism, September 1992. B.S., Auburn; M.A., LSU
- SKELTON, ROBERT B., Professor Emeritus, Foreign Languages and Literatures, June 1976. A.B., Michigan State Normal College; M.A., Ph.D., Michigan; Certificado, Brazil; Certificado, Chile
- SLAGH, TIM D., Associate Professor Emeritus, Electrical Engineering, July 1989. B.S., Michigan M&T; M.S., Auburn
- SMITH, CURTIS R., Professor Emeritus, Communication Disorders, January 1991. B.S., M.S., Ph.D., Southern Mississippi
- SMITH, FLOYD S., Associate Professor Emeritus, Mechanical Engineering, September 1981. B.S.Ch.E., B.S.M.E., M.S.Ch.E., Auburn
- SMITH, LEO A., Professor Emeritus, Industrial Engineering, September 1995. B.I.E., M.S.I.E., Georgia Tech; Ph.D., Purdue
- SMITH, PAUL C., Professor Emeritus, Pathobiology, April 1996. D.V.M., Auburn; M.S., Ohio State; Ph.D., Iowa State
- SMITH, ROBERT C., Professor Emeritus, Animal and Dairy Sciences, September 1995. B.S., Elmhurst; Ph.D., Illinois College of Medicine
- SMITHERMAN, RENFORD O., Professor Emeritus, Fisheries and Allied Aquacultures, September 1994. B.S., Ph.D., Auburn; M.S., North Carolina State
- SNOW, SAMUEL P., Professor Emeritus, Architecture, September 1981. B.S., B.L.A., M.S., Massachusetts; M.L.A., Harvard
- SPEAKE, DANIEL W., Professor Emeritus, Zoology and Wildlife Sciences, January 1995. B.S., M.S., Ph.D., Auburn
- SPEER, WILLIAM A., Professor Emeritus, Architecture, June 1980. B.S. Arch, Clemson, M.Arch, Rensselaer Tech
- STALLINGS, JAMES L., Associate Professor Emeritus, Agricultural Economics and Rural Sociology, July 1991. B.S., M.S., Purdue; Ph.D., Michigan State
- STEELE, H. ELLSWORTH, Professor Emeritus, Economics, April 1982. B.A., M.A., Nebraska; Ph.D., Ohio State
- STEVENSON, ROY EUGENE, Editor Emeritus, Research Information, Agricultural Experiment Station, January 1992. B.S., A u b u r n
- STREET, DONALD R., Professor Emeritus, Economics, June 1994. B.S., M.S., Auburn; Ph.D., Penn State
- STRICKLAND, ELMER OSCAR, Extension Leader, International Programs Coordinator Emeritus, September 1995. B.S., M.Ag.Ed., Auburn; Ed.D., LSU
- STROUD, OXFORD, Associate Professor Emeritus, English, September 1983. B.S., M.A., Auburn
- TAMBLYN, W. JOHN, Professor Emeritus, Music, January 1991. B.S., B.S., Auburn; M.Mus., Ph.D., Rochester
- TAUGNER, AGNES B., Professor Emerita, Art, June 1993. B.F.A., M.F.A., Illinois
- TEER, PATRICIA A., Associate Professor Emerita, Pathobiology, August 1990. D.V.M., M.S., Auburn; Ph.D., Colorado State
- THAXTON, G. DONALD, Associate Professor Emeritus, Physics, June 1990. B.A., Richmond; Ph.D., North Carolina
- THOMASSON, C. LARRY, Associate Professor Emeritus, Clinical Pharmacy Practice, October 1992. B.S., Cincinnati; Ph.D., Florida
- THOMPSON, ANNE E., Associate Provost & Vice President Emerita, University Outreach and Director Emerita of Alabama Cooperative Extension Service, September 1994. B.S., Auburn; M.A., Maryland; Ed.D. Oklahoma State
- THORNE, JACK F., Professor Emeritus, Accountancy, January 1990. B.S., Auburn; M.A., Ph.D., Alabama
- THURLOW, DONALD L., Associate Professor Emeritus, Agronomy and Soils, July 1992. B.S., M.S., Kansas State; Ph.D., Michigan State
- TINCHER, WILBUR A., JR., Professor Emeritus, Educational Leadership, September 1987. A.B., M.A., Ed.D., Kentucky
- TRENTHAM, GARY L., Alumni Professor Emeritus, Consumer Affairs, September 1995. B.S., M.A., Murray State; M.F.A., Indiana
- TRENTHAM, LANDA L., Professor Emerita, Education Foundations Leadership and Technology, September 1995. B.S., Kentucky; M.A., Murray State; Ed.D., Indiana
- TRUCKS, LOUIS B., Associate Professor Emeritus, Industrial Engineering, January 1983. B.S., Auburn; M.S., Pittsburgh; Ph.D., Oklahoma State
- TUCKER, HOWARD F., Associate Professor Emeritus, Animal and Dairy Sciences, October 1981. B.S., M.S., Ph.D., Auburn

- TURNER, LOUISE, Associate Professor Emerita, Health, Physical Education and Recreation, September 1975. B.A., SW Univ.; M.A., M.S., LSU; Ph.D., NYU
- TURK, ELIZABETH S., Librarian III Emerita, December 1987. B.A., Tulane; M.Ed., Auburn
- VALINE, WARREN J., Professor Emeritus, Counseling and Counseling Psychology, September 1989. B.S., Hardin-Simmons; M.Ed., Houston; Ph.D., Georgia
- VANDEGRIFT, FRANK, Director Emeritus, Cooperative Education, January 1985. B.M.E., Georgia Tech; M.A., Columbia Theo.
- VAN DE MARK, MILDRED S., Professor Emerita, Human Sciences, March 1973. B.S., Auburn; M.S., Columbia
- VAUGHAN, JOHN THOMAS, Dean Emeritus, Veterinary Medicine, September 1995. D.V.M., M.S., Auburn
- VIVES, DONALD L., Professor Emeritus, Chemical Engineering, June 1987. B.S., M.S., Columbia
- WADE, LARKIN H., Professor Emeritus, Forestry, July 1993. B.S., M.S., Auburn
- WALKER, DONALD F., Professor Emeritus, Large Animal Surgery and Medicine, October 1988. D.V.M., Colorado State
- WALKER, ROBERT P., Professor Emeritus, Textile Engineering, September 1994. B.S.T.M., Auburn; M.S., Institute of Textile Technology
- WALKIN, JACOB, Professor Emeritus, Political Science, September 1982. A.B., Cornell; M.A., Yale; Ph.D., California
- WALLS, BILLY G., Professor Emeritus, Director of Bands, January 1991. B.M., Baylor; M.M., Manhattan; Ph.D., Florida State
- WARBINGTON, THOMAS L., Associate Professor Emeritus, Foreign Languages, June 1992. B.S., M.A., Mississippi
- WARD, CHARLOTTE E., Associate Professor Emerita, Physics, June 1994. B.S., M.S., Kentucky; M.S., Ph.D., Purdue
- WARD, COLEMAN Y., Professor Emeritus, Horticulture, September 1995. B.S., M.S., Texas Tech; Ph.D., Virginia Tech
- WARD, CURTIS H., Professor Emeritus, Chemistry, June 1994. B.S., Indiana; M.S., Kentucky; Ph.D., Purdue
- WARREN, W. M., Professor Emeritus, Animal and Dairy Sciences, September 1980. B.S., Michigan State; M.S., Texas A&M; Ph.D., Missouri
- WATERS, WILLIAM T., Professor Emeritus, Textile Engineering, July 1986. B.S.T.E., Clemson; M.S., Inst. of Textile Tech
- WEIDNER, WILLIAM E., Professor Emeritus, Communication Disorders, June 1992. B.S., M.S., Bowling Green; Ph.D., Case-Western Reserve
- WHITE, CHARLES R., Associate Professor Emeritus, Industrial Engineering, September 1994. B.S., M.S., Ph.D., Purdue
- WHITE, J. HERBERT, Executive Director Emeritus, University Relations, October 1993. B.S., Auburn
- WHITE, MORRIS, Professor Emeritus, Agricultural Economics and Rural Sociology, January 1983. B.S., Auburn, M.S., Ph.D., Purdue
- WHITTENBURG, BOBBY L., Extension Animal Scientist & Associate Professor Emeritus, Animal and Dairy Sciences, April 1994. M.S., Tennessee
- WIGGINS, AGEE M., Professor Emeritus, Large Animal Surgery and Medicine, January 1989. D.V.M., Auburn; M.S., Kansas State
- WIGGINS, EARL L., Professor Emeritus, Animal and Dairy Sciences, August 1981. B.S., M.S., Oklahoma State; Ph.D., Wisconsin
- WIGGINS, LORNA A., Librarian III Emerita, September 1995. B.A., Agnes Scott; M.L.S., Emory
- WILBANKS, JAMES R., Director Emeritus, Engineering Extension Service, March 1994. B.M.E., M.M.E., Auburn
- WILBANKS, MARY ELIZABETH, Librarian III, Emerita, May 1985. A.B., Montevallo; M.A., Emory; M.S.L.S., North Carolina
- WILKEN, LEON O., Professor Emeritus, Pharmacuetics, February 1991. B.S., Pharm.D., Loyola; M.S., Ph.D., Texas
- WILLIAMS, DOUGLAS F., Associate Professor Emeritus, Educational Foundations, Leadership and Technology, June 1990. B.A., N. Michigan; M.A., Michigan; Ph.D., Texas
- WILLIAMS, ELIZABETH G., Associate Professor Emerita, Accountancy, June 1987. B.S., M.S., Auburn
- WILLIAMS, ERNEST, Professor Emeritus, Mathematics, June 1976. B.S., Birmingham Southern; M.S., Auburn; Ph.D., Mississippi
- WILLIAMS, HUGH O., Alumni Professor Emeritus, June 1985. B.A.A., Auburn; M.A., Columbia
- WILLIAMS, JOHN C., Professor Emeritus, Discrete and Statistical Sciences, September 1994. B.S., M.S., North Carolina State; Ph.D., Iowa State
- WILLIAMS, L.B., Editor Emeritus, University Relations, June 1988. B.S., Troy State; M.S., Peabody
- WILLIAMSON, EDWARD C., Professor Emeritus, History, June 1983. A.B., M.A., Florida; Ph.D., Pennsylvania
- WILMOTH, JAMES N., Professor Emeritus, Vocational and Adult Education, September 1995. B.S., Marshall; M.S., Ph.D., Wayne State
- WILT, GERALD R., Associate Professor Emeritus, Pathobiology, January 1994. B.S., Western Kentucky; M.S., Clemson
- WINKLER, JOHN K., Associate Professor Emeritus, Large Animal Surgery and Medicine, June 1983. D.V.M., Colorado State
- WRIGHT, JONE P., Associate Professor Emerita, Curriculum and Teaching, July 1991. B.S., M.Ed., Georgia; Ph.D., Alabama
- WRIGHT, CLARENCE DAN, Associate Professor Emeritus, Educational Foundations, Leadership and Technology, September 1993. B.S., Alabama; M.Ed., Ed.D., Auburn
- WRIGHT, THOMAS L., Hargis Professor Emeritus, English, June 1991. B.A., M.A., Ph.D., Tulane
- YEAGER, JOSEPH H., Professor & Department Head Emeritus, Agricultural Economics and Rural Sociology, January 1991. B.S., M.S., Auburn; Ph.D., Purdue
- YEAGER, LELAND B., Ludwig Von Mises Distinguished Professor Emeritus, Economics, March 1995. B.A., Oberlin; M.A., Ph.D., Columbia
- ZIEGLER, PAUL F., Associate Professor Emeritus, Chemistry, July 1982. B.S., Otterbein; M.S., Ph.D., Cincinnati

Alabama Agricultural Experiment Station

MUSE, WILLIAM V., President, B.S., Northwestern State; M.B.A., Ph.D., Arkansas
 PARKS, PAUL F., Provost & Vice President for Academic Affairs, B.S., M.S., Auburn; Ph.D., Texas A&M
 MORIARTY, C. MICHAEL, Associate Provost & Vice President for Research, B.S., Carnegie-Mellon; M.S., Cornell; Ph.D., Rochester
 MARION, JAMES E., Dean of Agriculture and Director (AAES), 1988, 1996. B.S., Berea; M.S., Kentucky; Ph.D., Georgia
 TEEM, DAVID H., Associate Director (AAES), B.S., M.S., Ph.D., Auburn
 THOMPSON, EMMETT, Associate Director (AAES), Dean & Professor of Forestry, 1977, 1996. B.S., Oklahoma State; M.S., North Carolina State; Ph.D., Oregon State
 HENTON, JUNE M., Associate Director (AAES), Dean & Professor of Human Sciences, 1985. B.S., Oklahoma State; M.S., Nebraska; Ph.D., Minnesota
 SCHNELLER, STEWART W., Associate Director (AAES), Dean & Professor of Sciences and Mathematics, 1994, 1996. B.S., M.S., Louisville; Ph.D., Indiana U.
 BOOSINGER, TIMOTHY R., Associate Director (AAES), Dean & Professor of Veterinary Medicine, 1983, 1996. D.V.M., Ph.D., Purdue
 GREEN, PATRICK D., Associate Director (AAES), B.S., Auburn

AGRICULTURAL ECONOMICS AND RURAL SOCIOLOGY

JOHNSON, J. LAUGHAN, Professor & Head, 1978, 1989. B.S., M.S., Auburn; Ph.D., Kentucky
 ADRIAN, JOHN L., JR., Professor, 1974, 1984. B.A.A., M.S., Auburn; Ph.D., Tennessee
 BAILEY, L. CONNER, Professor, 1985, 1994. B.Sc., Southern Oregon, M.A., Ohio; Ph.D., Cornell
 CLONTS, HOWARD A., JR., Professor, 1968, 1980. B.S., M.S., Auburn; Ph.D., Virginia Tech
 DUFFY, P. A., Professor, 1985, 1996. B.A., Boston College; Ph.D., Texas A & M
 DUNKELBERGER, J. E., Professor, 1962, 1982. A.B., Franklin & Marshall; M.S., Penn State; Ph.D., Mississippi State
 HARDY, WILLIAM E., JR., Professor, 1972, 1983. B.S., M.S., Ph.D., Virginia Tech
 HATCH, L. UPTON, Professor, 1982, 1996. B.A., Dartmouth; M.S., Georgia; Ph.D., Minnesota
 KINNUCAN, HENRY W., Professor, 1983, 1994. B.S., Illinois; M.S., Ph.D., Minnesota
 MARTIN, NEIL R., JR., Professor, 1977, 1984. B.S., M.S., Auburn; Ph.D., Illinois
 MOLNAR, JOSEPH J., Professor, 1976, 1986. B.A., M.A., Kent State; Ph.D., Iowa State
 NOVAK, JAMES L., Extension Economist & Professor, 1985, 1996. B.S., M.S., New Hampshire; Ph.D., Clemson
 TAYLOR, C. ROBERT, Eminent Scholar & Professor, 1987. B.S., Oklahoma State; M.S., Kansas State; Ph.D., Missouri
 JOLLY, C. M., Associate Professor, 1980, 1988. B.S., Tuskegee; M.S., Auburn; Ph.D., LSU
 NELSON, ROBERT G., Associate Professor, 1989, 1995. B.S., Oregon State; M.S., Auburn; Ph.D., Texas A&M
 TRAXLER, GREGORY J., Associate Professor, 1990, 1995. B.A., Portland; M.S., Minnesota; Ph.D., Iowa State

AGRICULTURAL ENGINEERING

TURNQUIST, P. K., Professor & Head, 1977. B.S., Kansas State; M.S., Ph.D., Oklahoma State
 JOHNSON, C. E., Professor, 1979. B.S., Oklahoma State; M.S., Ph.D., Iowa State
 HILL, D. T., Professor, 1979. B.S., M.S., Georgia; Ph.D., Clemson
 FLOOD, C. A., JR., Associate Professor, 1971, 1979. B.S., Florida; M.S., Kentucky; Ph.D., Purdue
 KOON, JOE L., Associate Professor, 1967, 1975. B.S., M.S., Ph.D., Auburn
 KUTZ, L. J., Associate Professor, 1986, 1992. B.S., Wisconsin; M.S., Ph.D., Purdue
 ROCHESTER, E. W., JR., Associate Professor, 1970, 1978. B.S., Clemson; M.S., Ph.D., North Carolina State
 TAYLOR, S.E., Associate Professor, 1989, 1995. B.S., M.S., Florida; Ph.D., Texas A&M
 WILHOIT, J. H., Associate Professor, 1989, 1995. B.S., M.S., Kentucky; Ph.D., Virginia Tech
 YOO, K. H., Associate Professor, 1983, 1990. B.S., Seoul; M.S., Ph.D., Idaho
 BAILEY, A. C., Agricultural Engineer (Coop. USDA), 1965. B.S., Michigan State; M.S., Illinois; Ph.D., Auburn
 BURT, EDDIE C., Agricultural Engineer (Coop. USDA), 1968. B.S., Georgia; Ph.D., Auburn
 ERBACH, DONALD C., Agricultural Engineer (Coop. USDA), 1996. B.S., M.S., Wisconsin; Ph.D., Iowa State
 RAPER, R.L., (Coop. USDA), 1987. B.S., Mississippi State; M.S., Ph.D., Iowa State
 SCHAFER, R. L., Agricultural Engineer (Coop. USDA), 1964. B.S., M.S., Ph.D., Iowa State
 WASHINGTON, B. H., Agricultural Engineer (Coop. USDA), 1985. B.S., Auburn
 WAY, T. R., Agricultural Engineer (Coop. USDA), 1992. B.S., Cornell; M.S., LSU; Ph.D., Nebraska
 McDONALD, T. P., Research Engineer (Coop. USDA Forest Service), 1993. B.S., M.S., Clemson; Ph.D., Purdue

AGRONOMY AND SOILS

TOUCHTON, J.T., Professor and Head, 1980, 1989. B.S., M.S., Georgia; Ph.D., Illinois
 BRANSBY, DAVID I., Professor, 1987, 1990. B.S., Natal (S.A.); M.S., Missouri; Ph.D., Natal (S.A.)
 DANE, JACOB, Professor, 1976, 1987. B.S., State Agr. (Netherlands); M.Sc., New Mexico State; Ph.D., Colorado State
 HARTZOG, DALLAS, Professor (Headland), 1969, 1991. B.S., M.S., Auburn
 MITCHELL, CHARLES C., Professor, 1984, 1995. B.S., Birmingham Southern; M.S., Auburn; Ph.D., Florida
 MOSJIDIS, J. A., Professor, 1985, 1996. Agron Degree, Univ. of Chile; Ph.D., California
 MULLINS, G. L., Professor, 1985, 1996. B.S., Berea; M.S., Virginia Tech; Ph.D., Purdue
 PATTERSON, M. G., Professor, 1985, 1996. B.S., M.S., Ph.D., Auburn
 WALKER, R. H., Professor, 1978, 1991. B.S., M.S., Ph.D., Mississippi State
 WEAVER, D. B., Professor, 1981, 1992. B.S.A., M.S., Georgia; Ph.D., Purdue
 WEHTJE, G. R., Professor, 1981, 1996. B.S., Wash. State; M.S., N. Dakota State; Ph.D., Nebraska

BASKIN, CHARLES C., Affiliate Professor, 1995. B.S., M.S., Auburn; Ph.D., Mississippi State
 CHIEN, S.H., Affiliate Professor (IFCD), 1989. B.S., National Taiwan; M.S. New Hampshire; Ph.D., Iowa State
 REEVES, D.W., Affiliate Professor (Coop USDA), 1989, 1995. B.S., Georgia Southwestern; M.S., Georgia; Ph.D., Auburn
 ROGERS, HUGO H., Affiliate Professor (Coop. USDA), 1984, 1987. B.S., M.S., Auburn; Ph.D., North Carolina
 ADAMS, J. E., Associate Professor, 1985, 1992. B.S., M.S., Auburn; Ph.D., Kansas State
 ODOM, J. W., Associate Professor, 1977, 1984. B.S., M.A., Tennessee; Ph.D., Purdue
 SHANNON, D.A., Associate Professor, 1991, 1996. B.A., Goshen; B.S., McGill; M.S., Ph.D., Cornell
 VAN SANTEN, EDZARD, Associate Professor, 1988, 1993. Ph.D., Wisconsin-Madison
 WOOD, CHARLES W., Associate Professor, 1990, 1993. B.S., M.S., Mississippi State; Ph.D., Colorado State
 ELKINS, C.B., Adjunct Associate Professor, 1980. B.S., M.S., Georgia
 EDWARDS, JAMES H., Affiliate Associate Professor (Coop. USDA), 1982. B.S., M.S., Georgia; Ph.D., North Carolina State
 SIKORA, F. J., Affiliate Associate Professor (IFDC), 1991. B.S., West Virginia; M.S., Tennessee; Ph.D., Illinois
 ENTRY, JAMES A., Assistant Professor, 1993. B.S., B.A., Montana; M.S., Idaho; Ph.D., Oregon State
 GUERTAL, ELIZABETH A., Assistant Professor, 1993. B.S., M.S., Ohio State; Ph.D., Oklahoma State
 HIGGINS, T.M., Assistant Professor, 1997. B.S., M.S., Auburn; Ph.D., Clemson
 MILLER, MARY S., Assistant Professor, 1993. B.S., M.S., LSU; Ph.D., Colorado State
 MONKS, C. DALE, Assistant Professor, 1993. B.S., Middle Tennessee State; M.S., Arkansas; Ph.D., Georgia
 STOLT, MARK H., Assistant Professor, 1996. B.S., M.S., Maryland; Ph.D., Virginia Tech
 NORFLEET, M.L., Affiliate Assistant Professor, 1995. B.S., Murray State; M.S., Clemson; Ph.D., Kentucky
 PRIOR, S.A., Affiliate Assistant Professor, 1994. B.S., M.S., North Carolina State; Ph.D., Auburn
 TORBERT, H.A., Affiliate Assistant Professor, (Coop. USDA), 1990. B.S., M.S., Auburn; Ph.D., Illinois
 BURMESTER, C. H., Agronomist, 1980, 1987. B.S., M.S., Auburn

ANIMAL AND DAIRY SCIENCES

BERGEN, WERNER G., Head & Professor, 1995. B.S., M.S., Ph.D., Ohio State
 CUMMINS, KEITH A., Professor, 1980, 1994. B.S., M.S., Washington State; Ph.D., Virginia Tech
 FROBISH, LOWELL T., Professor, 1986. B.S., Illinois; M.S., Ph.D., Iowa State
 KUHLERS, DARYL L., Professor, 1978, 1984. B.S., Iowa State; M.S., Ph.D., Wisconsin
 McCASKEY, THOMAS A., Professor, 1967, 1982. B.S., Ohio; M.S., Ph.D., Purdue
 MOSS, BUELON R., Ext. An. Scientist & Professor, 1983. Ph.D., Tennessee
 MUNTIFERING, RUSSELL B., Professor, 1990, 1994. B.S., M.S., California-Davis; Ph.D., Arizona
 SCHMIDT, STEPHEN P., Professor, 1976, 1992. B.S., Idaho; M.S., Ph.D., Wisconsin
 BARTOL, FRANK F., Associate Professor, 1983, 1989. B.S., Virginia Tech; M.S., Ph.D., Florida
 CHIBA, LEE I., Associate Professor, 1990, 1996. B.S., M.S., Ph.D., Nebraska
 COLEMAN, DALE, Associate Professor, 1984, 1992. B.S., Colorado State; M.S., Ph.D., W. Virginia
 DAVENPORT, GARY M., Associate Professor, 1989, 1995. B.S., M.S., Ph.D., Kentucky
 MIKEL, W. BENJY, Associate Professor, 1988, 1993. B.S., Auburn; M.S., Ph.D., Mississippi State
 MULVANEY, DONALD, Associate Professor, 1983, 1991. A.S., LLCC, Springfield (Ill.); M.S., Ph.D., Michigan State
 OWSLEY, W. FRANK, Ext. Animal Scientist & Associate Professor, 1990. B.S., M.S., Texas A&M; Ph.D., Texas Tech
 RAHE, C. HARDIN, Associate Professor, 1980, 1989. B.S., Tarleton State; M.S., Ph.D., Texas A&M
 RANKINS, DARRELL L. JR., Associate Professor, 1989, 1994. B.S., Illinois; M.S., Ph.D., New Mexico State
 KRIESE, LISA A., Assistant Professor, 1993. B.S., Cornell; M.S., Kansas State; Ph.D., Georgia
 LONERGAN, ELIZABETH H., Assistant Professor, 1995. B.S., Missouri; M.S., Ph.D., Iowa State
 LONERGAN, STEVEN M., Assistant Professor, 1995. B.S., M.S., Iowa State; Ph.D., Nebraska
 PAYNE, D. MICHAEL, Assistant Professor, 1990. B.S., Ph.D., N. Texas

ANIMAL HEALTH RESEARCH

BOOSINGER, T.R., Dean, Veterinary Medicine, 1983, 1996. D.V.M., Ph.D., Purdue
 JANICKI, J.S., Associate Dean for Research, Veterinary Medicine, 1995. B.S., Delaware; M.S., Catholic; Ph.D., Alabama
 STRINGFELLOW, D.A., Coordinator & Associate Professor, 1984, 1994. D.V.M., Cornell; M.S., Auburn
 BLAGBURN, B.L., Professor, 1982, 1991. B.S., M.S., Andrews; Ph.D., Illinois
 SARTIN, J.L., Professor, 1982, 1992. B.S., M.S., Auburn; Ph.D., Okla. State
 PANANGALA, V.S., Professor, 1980, 1995. D.V.M., Pakistan; M.S., Guelph; Ph.D., Cornell
 BELKNAP, E.B., Senior Research Associate, 1996. M.S., Michigan State; D.V.M., Georgia

BOTANY & MICROBIOLOGY

BROWN, ALFRED E., Associate Professor & Chair, 1980, 1996. B.S., Calif. State, Ph.D., UCLA
 CHERRY, JOE H., Professor, 1989, 1994. B.S., Tennessee; M.S., Ph.D., Illinois
 DANIELL, HENRY, Associate Professor, 1993. B.S., M.S., Madras; Ph.D., Madurai Kamaraj
 DUTE, ROLAND R., Professor, 1982, 1993. B.S., M.S., Ohio State; Ph.D., Wisconsin
 LEMKE, PAUL A., Professor, 1979, 1984. B.S., Tulane; M.A., Toronto; Ph.D., Harvard
 PETERSON, CURTIS M., Professor, 1971, 1994. B.S., Moorhead State; Ph.D., Oregon
 SINGH, NARENDRA K., Professor, 1989, 1995. B.Sc., M.Sc., Patna-India; Ph.D., Bombay
 WEETE, JOHN D., Professor, 1972, 1982. B.S., M.S., Stephen F. Austin; Ph.D., Houston
 BARBAREE, JAMES M., Associate Professor, 1992. B.S., M.S., Southern Mississippi; Ph.D., Georgia
 BOYD, ROBERT S., Associate Professor, 1988, 1993. B.S., M.S., Calif. State Polytech.; Ph.D., California-Davis
 LOCY, ROBERT D., Associate Professor, 1991. A.B., Defiance; Ph.D., Purdue
 MUSSO, RICHARD E., Associate Professor, 1991. B.S., Stanford; Ph.D., UCLA
 NIELSEN, BRENT L., Associate Professor, 1988, 1993. B.S., Brigham Young; Ph.D., Oregon State

SHAW, JOSEPH J., Associate Professor, 1988, 1993. B.S., California-Santa Barbara; Ph.D., California-Riverside
FOLKERTS, DEBBIE, Assistant Professor, 1993. B.S., M.S., Auburn; Ph.D., Georgia
HINTON, ARTHUR, Assistant Professor, 1992. B.S., Alabama; M.S., Kentucky; Ph.D., LSU
ROBERTS, SHARON, Assistant Professor, 1996. B.S., California-San Diego; M.P.H., UCLA; Ph.D., California-Davis

CONSUMER AFFAIRS

WARFIELD, CAROL L., Professor & Head, 1977, 1990. B.S., S. Dakota State; M.S., Illinois; Ph.D., Illinois
FORSYTHE, SANDRA M., Wrangler Professor, 1991, 1995. B.S., E. Tennessee State; M.S., Virginia Tech; Ph.D., Tennessee
SOLOMON, MICHAEL R., Professor, 1995. B.A., Brandeis; M.A., Ph.D., North Carolina
ANDERSON, LENDA JO., Associate Professor, 1980, 1990. B.S., M.S., Louisiana Tech; Ed.D., Auburn

ENTOMOLOGY

CUPP, EDDIE W., Professor & Head, 1995. B.A., Murray State; Ph.D., Illinois
BREWER, J. WAYNE, Professor, 1987, 1995. B.S., M.A., Central Michigan; Ph.D., Purdue
CLARK, WAYNE E., Professor, 1978, 1989. B.S., M.S., Brigham Young; Ph.D., Texas A&M
MULLEN, GARY R., Professor, 1975, 1989. B.A., Northeastern; Ph.D., Cornell
APPEL, ARTHUR G., Associate Professor, 1985, 1990. B.A., UCLA; M.S., Ph.D., California-Riverside
CANE, JAMES H., Associate Professor, 1984, 1990. B.S., SUNY; Ph.D., Kansas
GAYLOR, MICHAEL J., Associate Professor, 1978, 1984. B.S., M.S., Auburn; Ph.D., Texas A&M
HYCHE, LACY L., Associate Professor, 1952, 1960. B.S., M.S., Auburn
WEEKS, JAMES R., Associate Professor, 1976, 1988. B.S., M.S., Auburn
WILLIAMS, MICHAEL L., Associate Professor, 1973, 1978. B.S., Arkansas State; M.S., Ph.D., Virginia Tech
ZEHNDER, GEOFFREY W., Associate Professor, 1991. B.S., California-Davis; M.S., Ph.D., California-Riverside
FLANDERS, KATHY, Assistant Professor, 1995. B.S., Cornell; M.S., Ph.D., Minnesota
OI, FAITH, Assistant Professor, 1995. B.A., M.S., Hawaii; Ph.D., Florida
MOAR, WILLIAM J., Assistant Professor, 1990. B.A., B.S., Oregon State; M.S., Ph.D., California-Riverside

FAMILY AND CHILD DEVELOPMENT

BRADBARD, MARILYN R., Professor & Head, 1978, 1984. B.S., New Hampshire; M.S., Ph.D., Georgia
HENTON, JUNE M., Professor & Dean, 1985. B.S., Okla. State; M.S., Nebraska; Ph.D., Minnesota
AVERY, ARTHUR W., Professor & Associate Dean, 1985. B.A., M.S., Ph.D., Penn State
LAMKE, LEANNE K., Professor, 1985, 1995. B.A., N. Dakota; M.S., Ph.D., Texas Tech
PETTIT, GREG S., Professor, 1989, 1995. B.S., M.S., Auburn; Ph.D., Indiana
SOLLIE, DONNA L., Professor, 1986, 1993. B.S., Mississippi State; M.S., Kentucky; Ph.D., Tennessee
VAUGHN, BRIAN, Professor, 1988. B.A., Arizona State; M.A., Ph.D., Minnesota
MIZE, JACQUELYN, Associate Professor, 1984, 1990. B.A., M.S., Georgia; Ph.D., Purdue
PITTMAN, JOE F., Associate Professor, 1984, 1989. B.S., M.A., Ph.D., Georgia

FISHERIES AND ALLIED AQUACULTURES

JENSEN, JOHN W., Professor & Head, 1979, 1995. B.S., Minnesota; M.S., Ph.D., Auburn
BAYNE, DAVID R., Professor, 1972, 1991. B.A., Tulane; M.S., Ph.D., Auburn
BOYD, CLAUDE E., Professor, 1968, 1977. B.S., M.S., Mississippi State; Ph.D., Auburn
DUNHAM, REX A., Professor, 1981, 1992. B.S., Illinois; M.S., Ph.D., Auburn
GRIZZLE, JOHN M., Professor, 1976, 1988. B.S., M.S., Oklahoma State; Ph.D., Auburn
HOSKING, WILLIAM, Professor, 1977, 1988. B.S., M.S., Ph.D., Georgia
LIM, CHHORN E., Affiliate Professor, 1994. Diploma, Engr., Phnom-Penh; M.S., Ph.D., Auburn
LOVELL, RICHARD T., Distinguished University Professor, 1969, 1995. B.S., M.S., Oklahoma State; Ph.D., LSU
LOVSHIN, LEONARD L., JR., Professor, 1972, 1985. B.A., Miami-Ohio; M.S., Wisconsin; Ph.D., Auburn
PLUMB, JOHN A., Alumni Professor, 1969, 1985. B.A., Bridgewater; M.S., Illinois; Ph.D., Auburn
ROUSE, DAVID B., Professor, 1981, 1995. B.S., M.S., Auburn; Ph.D., Texas A&M
BRADY, YOLANDA, Associate Professor, 1986, 1992. B.S., Mississippi; M.S., Southern Mississippi; Ph.D., Auburn
DEVRIES, DENNIS R., Associate Professor, 1990, 1994. B.S., Purdue; M.S., Ph.D., Ohio State
MACEINA, MICHAEL J., Associate Professor, 1990, 1994. B.S., M.S., Florida; Ph.D., Texas A&M
MALVESTUTO, STEPHEN P., Affiliate Associate Professor, 1991. B.S., California-Santa Barbara; M.S., Nairobi; Ph.D., Auburn
MASSER, MICHAEL, Associate Professor, 1989, 1993. B.A., Texas; M.A., Incarnate Word; Ph.D., Texas A&M
PHELPS, RONALD P., Associate Professor, 1975, 1982. B.S., Ph.D., Auburn
POPM, THOMAS J., Associate Professor, 1977, 1988. B.S., M.S., Michigan State; Ph.D., Auburn
SZEDLMAYER, STEPHEN, Extension Specialist & Associate Professor, 1990, 1995. B.A., Millersville; M.S., S. Florida; Ph.D., William & Mary
WALLACE, RICHARD K., Associate Professor, 1983, 1988. B.S., Ohio Wesleyan; M.S., Puerto Rico; Ph.D., Auburn
FREEMAN, MARY, Affiliate Assistant Professor, 1992. B.S., M.S., Ph.D., Georgia
IRWIN, ELISE R., Assistant Professor, 1995. B.S., Delaware; M.S., Tennessee Tech; Ph.D., North Carolina State
LIU, ZHANJIANG, Assistant Professor, 1995. B.S., Northwestern; M.S., Ph.D., Minnesota
GOODMAN, RANDELL, Superintendent, Research Station, 1975, 1981. B.S., Middle Tennessee State; M.S., Auburn
DEUTSCH, WILLIAM G., Research Fellow, 1988, 1992. B.S., Houghton; B.A., Pennsylvania; M.A., SUNY-Binghamton; Ph.D., Auburn
TEICHERT-CODDINGTON, DAVID, Research Fellow, 1989. B.S., Houghton; M.S., Ph.D., Auburn
WEBBER, E. CLIFF, Research Fellow, 1980, 1989. B.S., M.S., Mississippi; Ph.D., Auburn

FORESTRY

- THOMPSON, EMMETT F., Professor & Dean, Forestry, 1977, 1984. B.S., Okla. State; M.S., North Carolina State; Ph.D., Oregon State
- BIBLIS, EVANGELOS J., Professor, 1965, 1973. B.F., Thessaloniki; M.F., D.F., Yale
- GJERSTAD, DEAN H., Professor, 1975, 1988. B.S., M.S., Ph.D., Iowa State
- LOCKABY, B. GRAEME, Professor, 1986, 1992. B.S., M.S., Clemson; Ph.D., Mississippi State
- SOUTH, DAVID, Professor, 1975, 1993. B.S., M.S., North Carolina State; Ph.D., Auburn
- TANG, R. C., Professor, 1978. B.S., National Chung-Hsing; Ph.D., North Carolina State
- BLISS, JOHN C., Extension Forester & Associate Professor, 1990, 1994. B.A., M.S., Ph.D., Wisconsin-Madison
- CARINO, HONORIO F., Associate Professor, 1981, 1988. B.S., M.S., Philippines; Ph.D., Minnesota
- CHAPPELKA, ARTHUR, Associate Professor, 1987, 1993. B.S., M.S., Florida; Ph.D., Virginia Tech.
- ELDER, THOMAS J., Associate Professor, 1979. B.S., S. Methodist; M.F., Stephen F. Austin; Ph.D., Texas A&M
- FLICK, WARREN A., Associate Professor, 1977. B.S., Ph.D., Syracuse
- GLOVER, GLENN R., Associate Professor, 1975, 1992. B.S., M.S., Auburn; Ph.D., Virginia Tech
- GOLDEN, MICHAEL S., Associate Professor, 1975. A.B., Trevecca; M.S., Auburn; Ph.D., Tennessee
- LANFORD, BOBBY L., Associate Professor, 1978. B.S., M.S., Clemson; Ph.D., State University of New York
- McNABB, KENNETH L., Extension Forester & Associate Professor, 1989, 1994. B.S., M.S., Southern Illinois; Ph.D., Florida
- SOMERS, GREG L., Associate Professor, 1987, 1992. B.S., Oklahoma State; M.S., Ph.D., Virginia Tech
- TEETER, LAWRENCE D., Associate Professor, 1985, 1991. A.B., Michigan; Ph.D., Colorado State
- TUFTS, ROBERT A., Associate Professor, 1979, 1989. B.S.F., M.S., LSU; Ph.D., Virginia Tech
- DUBOIS, MARK, Extension Forester & Assistant Professor, 1994. B.S., Arizona; M.S., Missouri; Ph.D., Mississippi State
- ENEBAK, SCOTT A., Assistant Professor, 1995. B.S., M.S., Minnesota; Ph.D., West Virginia
- FLYNN, KATHRYN M., Extension Forester & Assistant Professor, 1992. B.S., Auburn; M.S., Ph.D., LSU
- MACKENZIE, MARK, Assistant Professor, 1995. B.A., Kalamazoo; M.S., Ill. State; Ph.D., Tennessee
- MELDAHL, RALPH S., Assistant Professor, 1978. B.S., M.S., Ph.D., Wisconsin
- SAMUELSON, LISA, Assistant Professor, 1994. B.S., M.S., Georgia; Ph.D., Virginia Polytechnic
- ZHANG, DAWEI, Assistant Professor & Extension Forester, 1994. B.S., South Central Forestry; M.S., Beijing Forestry; Ph.D., British Columbia
- CAREY, WILLIAM A., Research Fellow, 1990. B.S., M.S., Florida; Ph.D., Duke
- RUNION, G. BRETT, Research Fellow, 1993. B.S., M.S., Ph.D., North Carolina State
- ZUTTER, BRUCE R., Research Fellow, 1996. B.S.F., Purdue; M.S., Virginia Tech; Ph.D., Auburn

USDA FOREST SERVICE, G. W. ANDREWS FORESTRY SCIENCES LABORATORY

Vegetation Management Research

- BOYER, WILLIAM D., Affiliate Associate Professor, 1975, 1977. B.S., U.S. Merch. Marine; B.S., M.S., Syracuse; Ph.D., Duke
- MICHAEL, JERRY L., Affiliate Associate Professor, 1977, 1992. B.S., Elon; M.S., North Carolina; Ph.D., Colorado State
- MILLER, JAMES H., Affiliate Associate Professor, 1977, 1992. B.S., Oklahoma State; M.S., Purdue; Ph.D., Oregon State
- McMAHON, CHARLES K., Project Leader & Affiliate Associate Professor, 1987, 1992. B.S., St. Peter's; M.S., Rutgers; M.S.A., Georgia Col.

Forest Engineering

- McDONALD, TIMOTHY P., Affiliate Assistant Professor, 1991. B.S., M.S., Clemson; Ph.D., Purdue
- RUMMER, ROBERT B., Affiliate Assistant Professor, 1992. B.S., M.S., Idaho; Ph.D., Auburn
- STOKES, BRYCE J., Project Leader & Affiliate Associate Professor, 1980, 1992. B.S., M.S., Mississippi State; Ph.D., Auburn

HORTICULTURE

- DOZIER, W. ALFRED, JR., Professor & Chair, 1965, 1995. B.S., M.S., Auburn; Ph.D., Virginia Tech
- GILLIAM, C.H., Professor, 1980, 1983. B.S., Tennessee-Martin; M.S., Ph.D., Virginia Tech
- GOFF, WILLIAM D., Professor, 1988, 1993. B.S., M.S., Ph.D., Clemson
- HIMELRICK, DAVID G., Professor, 1989, 1995. B.S., Plymouth State; M.S., New Hampshire; Ph.D., West Virginia
- KEEVER, GARY J., Professor, 1982, 1993. B.S., Clemson; M.S., Ph.D., Cornell
- PONDER, H.G., Professor, 1980, 1985. B.S., M.S., Auburn; Ph.D., Michigan State
- BEHE, BRIDGET K., Associate Professor, 1989, 1995. B.S., Ph.D., Penn State; M.S., Ohio State
- BROWN, JAMES E., Associate Professor, 1985, 1990. B.S., Fort Valley; M.S., Tuskegee; Ph.D., Illinois
- EAKES, DONALD J., Associate Professor, 1989, 1995. B.S., M.S., Auburn; Ph.D., Virginia Tech
- TILT, KENNETH M., Associate Professor, 1989. B.A., M.S., E. Carolina State; Ph.D., North Carolina State
- DANE, FENNY, Assistant Professor, 1995. B.S., Agric. U (Netherlands); M.S., New Mexico State; Ph.D., Colorado State
- EBEL, ROBERT C., Assistant Professor, 1996. B.S., Missouri; M.S., Ph.D., Washington State
- KEMBLE, JOSEPH M., Assistant Professor, 1993. B.S., Delaware; M.S., Ph.D., North Carolina State
- KESSLER, J. RAYMOND, Assistant Professor, 1995. B.S., Auburn; M.S., Mississippi State; Ph.D., Florida
- SIBLEY, JEFFREY L., Assistant Professor, 1996. B.S., M.S., Auburn; Ph.D., Georgia
- SIMONNE, ERIC H., Assistant Professor, 1996. Ph.D., Georgia
- WOODS, FLOYD M., Assistant Professor, 1990. B.S., Tuskegee; M.S., Cornell; Ph.D., Mississippi State

NUTRITION AND FOOD SCIENCE

GROPPER, SAREEN S., Associate Professor, 1988, 1995. B.S., Maryland; M.S., Ph.D., Florida State
KEITH, ROBERT E., Professor & Interim Head, 1978, 1992. B.S., M.S., Florida State; Ph.D., Virginia Tech
CRAIG-SCHMIDT, MARGARET C., Associate Professor, 1977, 1990. B.A., Duke; Ph.D., Wisconsin
BELL, LEONARD, Assistant Professor, 1994. B.S., Virginia Polytechnic; M.S., Ph.D., Minnesota
HSIEH, PEGGY Y., Assistant Professor, 1993. B.S., Catholic Fu-Jen; M.S., Purdue; Ph.D., Florida State
WEESE, S. JEAN, Assistant Professor, 1987, 1990. B.S., M.A., Eastern Kentucky; Ph.D., Tennessee
WHITE, B. DOUGLAS, Assistant Professor, 1996. B.S., M.S., Auburn; Ph.D., LSU

PLANT PATHOLOGY

KLOEPPER, JOSEPH W., Professor & Acting Head, 1980, 1992. B.S., M.S., Colorado State; Ph.D., California-Berkeley.
BACKMAN, PAUL A., Professor, 1971, 1983. B.S., Ph.D., Cal-Davis
MORGAN-JONES, GARETH, Distinguished University Professor, 1973, 1994. B.S., Wales; M.S., Ph.D., Nottingham
RODRIGUEZ-KABANA, RODRIGO, Distinguished University Professor, 1965, 1995. B.S., M.S., Ph.D., LSU
BOWEN, KIRA L., Associate Professor, 1987, 1993. B.S., Penn State; M.S., Minnesota; Ph.D., Illinois
TUZUN, SADIK, Associate Professor, 1990, 1994. M.S., Ankara; Ph.D., Kentucky
MURPHY, JOHN F., Assistant Professor, 1988, 1994. B.S., Springfield; M.S., Clemson; Ph.D., Illinois
WILSON, MARK, Assistant Professor, 1989, 1994. B.S., Bristol; Ph.D., Manchester

POULTRY SCIENCE

BREWER, ROBERT N., Professor & Head, 1968, 1987. B.S., M.S., Auburn; Ph.D., Georgia
ROLAND, DAVID A., University Professor, 1976, 1991. B.S., Ph.D., Georgia
BILGILI, S.F., Ext. Poultry Scientist & Professor, 1985, 1996. D.V.M., Ankara; M.S., Oregon State; Ph.D., Auburn
EWALD, SANDRA J., Professor, 1990, 1995. B.A., Ph.D., Texas
GIAMBRONE, JOSEPH J., Professor, 1977, 1989. B.S., M.S., Delaware; Ph.D., Georgia
McDANIEL, GAYNER R., Professor, 1968, 1979. B.S., M.S., Auburn; Ph.D., Kansas State
MORAN, E.T., JR., Professor, 1986. B.S., Rutgers; M.S., Ph.D., Washington State
RENDEN, JOSEF, Professor, 1981, 1990. B.S., M.S., Ph.D., California
CONNER, D.E., Associate Professor, 1989, 1995. B.S., M.S., Ph.D., Georgia
LIEN, R.J., Associate Professor, 1989, 1995. B.S., M.S., Texas A&M; Ph.D., North Carolina State
NORTON, ROBERT A., Assistant Professor, 1995. B.S., M.S., Southern Illinois; Ph.D., Arkansas

RESEARCH DATA ANALYSIS

SANDERS, LAURA G., Research Associate, 1994, 1996. B.S., Troy State; M.P.S., Auburn
TZENG, MIEN-HUE, Research Associate, 1987, 1988. B.A., Nat'l. Taiwan; M.S., Texas Tech
WEST, MARK S., Associate Professor, 1989, 1994. B.S., South Alabama; Ph.D., Alabama

RESEARCH INFORMATION

ROBERSON, JAMES ROY, Assistant Director & Editor, 1973, 1992. B.A., M.A., Auburn
HEARN, ROBERT A., Associate Editor, 1988, 1992. B.S., Auburn
SMITH, CATHERINE L., Associate Editor, 1988, 1992. B.S., Auburn
RODRIGUEZ, TERESA E., Art Designer II, 1971, 1989. B.A., M.S., Auburn

RESEARCH INSTRUMENTATION

MEADOWS, CHARLES, Manager, 1979, 1982.

RESEARCH OPERATIONS

KELLY, PEYTON E., Superintendent, 1974, 1989.

PLANT SCIENCE RESEARCH CENTER

ELKINS, CHARLES B., Superintendent, 1972, 1991. B.S., M.S., Georgia

ZOOLOGY & WILDLIFE SCIENCE

WOOTEN, MARIE, Associate Professor & Acting Head, 1987, 1995. B.S., Memphis State; Ph.D., Texas Woman's U.
BRADLEY, JAMES T., Professor 1976, 1991. B.S., Wisconsin; Ph.D., Washington
CAUSEY, M. KEITH, Professor, 1968, 1974. B.S., M.S., Ph.D., LSU
FOLKERTS, GEORGE, Professor, 1966, 1977. B.A., M.A., Southern Illinois; Ph.D., Auburn
HOLLER, NICHOLAS R., Professor, 1985, 1992. B.A., M.A., Ph.D., Missouri
MIRARCHI, RALPH E., Professor, 1978, 1988. B.S., Muhlenberg; M.S., Ph.D., Virginia Tech
PRITCHETT, JOHN F., Professor, 1973, 1982. B.S., M.S., Auburn; Ph.D., Iowa State
SUNDERMANN, CHRISTINE, Professor, 1984, 1994. B.S., Iowa State; Ph.D., Georgia
ARMSTRONG, JAMES B., Associate Professor, 1990, 1995. B.S., Freed-Hardeman; M.S., Abilene Christian; Ph.D., VPI
GUYER, CRAIG, Associate Professor, 1987, 1992. B.A., Humboldt State; M.S., Idaho State; Ph.D., Miami
HEPP, GARY R., Associate Professor, 1988, 1993. B.S., Ohio State; M.S., Clemson; Ph.D., North Carolina State
KEMPF, STEPHEN C., Associate Professor, 1985, 1991. B.S., Case Western Reserve; Ph.D., Hawaii

STRIBLING, H. LEE, Associate Professor, 1985, 1992. B.S., South Carolina; M.S., Clemson; Ph.D., North Carolina State
WOOTEN, MICHAEL C., Associate Professor, 1986, 1991. B.S., Memphis State; Ph.D., N. Texas
DICKS, BENNIE J., Superintendent, Farm Services, 1976, 1990.
FEMINELLA, JACK W., Assistant Professor, 1991. B.S., SUNY; M.S., N. Texas; Ph.D., California-Berkeley
HILL, GEOFFREY E., Assistant Professor, 1993. B.S., Indiana; Ph.D., Michigan
MENDONCA, MARY T., Assistant Professor, 1991. B.S., Rutgers; M.S., Central Florida; Ph.D., California-Berkeley
MOSS, ANTHONY G., Assistant Professor, 1992. B.A., Johns Hopkins; Ph.D., Boston University

E.V. SMITH RESEARCH CENTER

BANNON, JAMES S., Center Director, 1989. B.S., M.S., Auburn; Ph.D., LSU
DICKS, BENNIE J., Superintendent, Farm Services, 1976, 1990.
GREGORY, WILLIAM H., III, Superintendent, Beef Cattle Unit, 1987. B.S., Auburn
NIGHTENGALE, STEVAN P., Superintendent, Plant Breeding Unit, 1984. B.S., N.W. Oklahoma State; M.S., Oklahoma State
SEAY, DON S., AAES System Engr./Supt. Agr. Engr. Unit, 1979, 1991. B.S.E.E., Auburn
SMITH, ROBERT C., III, Superintendent, Dairy Unit, 1989, 1990. B.S., Auburn
WILLIAMSON, DANE R., Superintendent, Field Crops Unit, 1993. B.S., M.S., Michigan State

SUBSTATIONS AND FIELDS

Black Belt-Marion Junction, Dallas County

HOLLIMAN, JAMES L., Superintendent, 1975, 1989. B.S., M.S., Mississippi State
HARRIS, JAMES R., Assistant Superintendent, 1990. B.S., Auburn; M.S., Clemson

Chilton Area Horticulture-Clanton, Chilton County

PITTS, JAMES A., Superintendent, 1979, 1983. B.S., M.S., Auburn

Gulf Coast-Fairhope, Baldwin County

CARDEN, EMMETT L., Superintendent, 1969, 1978. B.S., M.S., Auburn
McDANIEL, N. R., Associate Superintendent, 1969, 1973. B.S., M.S., Auburn
PEGUES, MALCOMB D., Assistant Superintendent, 1985, 1990. B.S., M.S., Auburn

Lower Coastal Plain-Camden, Wilcox County

LITTLE, JOE A., Superintendent, 1959, 1975. B.S., W. Kentucky; M.S., Auburn
ROSE, PAUL A., Assistant Superintendent, 1988, 1989. B.S., Berry College; M.S., Auburn

North Alabama Horticulture-Cullman, Cullman County

CAYLOR, ARNOLD W., Interim Superintendent, 1987, 1995. B.S., M.S., Auburn

Ornamental Horticulture Substation-Spring Hill, Mobile County

OLIVE, JOHN, W., Superintendent, 1989, 1990. B.S., M.S., Georgia
STEPHENSON, JAMES C., JR., Associate Superintendent, 1981. B.S., M.S., Auburn

Piedmont Substation-Camp Hill, Tallapoosa County

OWEN, JOHN T., Superintendent, 1989. B.S., Auburn

Sand Mountain-Crossville, DeKalb County

RUF, MARVIN E., Interim Superintendent, 1976, 1995. B.S., M.S., Auburn

Tennessee Valley-Belle Mina, Limestone County

BURGESS, H. ELLIS, Associate Superintendent, 1967, 1988. B.S., Auburn
NORRIS, BOBBY E., JR., Interim Superintendent, 1988, 1995. B.S., M.S., Auburn

Upper Coastal Plain-Winfield, Fayette & Marion Counties

RAWLS, RANDALL C., Superintendent, 1990. B.S., M.S., Auburn

Wiregrass-Headland, Henry County

WELLS, LARRY, Interim Superintendent, 1984, 1995. B.S., M.S., Auburn
GAMBLE, BRIAN E., Assistant Superintendent, 1986, 1987. B.S., M.S., Auburn

Brewton & Monroeville Fields-Escambia & Monroe Counties

AKRIDGE, J. RANDALL, Superintendent, 1967, 1984. B.S., Auburn

Prattville Field-Autauga County

MOORE, DON P., Superintendent, 1982. B.S., M.S., Auburn

Alabama Cooperative Extension System*

MUSE, WILLIAM V., President, B.S., Northwestern State; M.B.A., Ph.D., Arkansas
WILSON, DAVID, Associate Provost & Vice President for University Outreach, 1995. B.S., M.Ed., Tuskegee; M.Ed., Ed.D., Harvard

SMITH, WILLIAM G., Extension Interim Director, 1965, 1990. B.S., M.Ag., Ph.D., Auburn

Agriculture

MARION, JAMES E.,** Dean

SHUMACK, RONALD,** Acting Associate Dean for Extension

Department Heads

JOHNSON, J. LAVAUGHN,** Agricultural Economics & Rural Sociology

TURNQUIST, PAUL K.,** Agricultural Engineering

TOUCHTON, JOSEPH,** Agronomy & Soils

HARRIS, RALPH,** Animal & Dairy Sciences

BREWER, WAYNE,** Entomology

ROGERS, WILMER,** (Interim), Fisheries & Allied Aquacultures

DOZIER, WILLIAM A.,** (Acting) Horticulture

KLOEPPER, JOSEPH W.,** Plant Pathology

BREWER, ROBERT N.,** Poultry Science

Forestry

THOMPSON, EMMETT F., Dean**

BENGTSON, GEORGE,** Associate Dean for Extension

Human Sciences

HENTON, JUNE, Dean**

HUBBARD, SUSAN S.,** Human Sciences Extension Coordinator

Department Heads

WARFIELD, CAROL,** Consumer Affairs

BRADBARD, MARILYN R.,** Family & Child Development

GREEN, NANCY,** Nutrition & Foods

Sciences & Mathematics

SCHNELLER, STEWART W., Dean**

Department Head

PRITCHETT, JOHN F.,** Zoology-Wildlife

DIRECTOR'S OFFICE

JONES, STEPHEN B., Extension Director, 1997. B.S. SUNY, M.S. George Washington University, Ph.D. SUNY

BROWN, P. W., Extension Affirmative Action Programming Officer, 1991. B.S., M.Ed., Ed.S., Tuskegee

CARTER, JANNIE, Extension Assistant Director, 1992. B.S., M.Ed. Alabama A&M, Ph.D., Ohio State

ELLIOTT, THOMAS R., Extension Assistant Director, Admin. Svcs., 1970, 1991. B.S., Austin Peay, M.Ed., Ed.D., Auburn

FOWLER, SAMUEL R., Interim Extension Associate Director, Rural and Traditional Programs and Extension Associate Director, Field Operations & Governmental Relations, 1982, 1992. B.S., M.S., Ph.D., Mississippi State

HENDERSON, CHINELLA, Interim Extension Associate Director, Urban Affairs and New Nontraditional Programs, 1976. B.S., Alabama A&M, M.S. University of Wisconsin, Ph.D. Iowa State

HURT, MARY M., Extension Head, Urban Component, 1971. B.S., M.S. Alabama A&M

JOHNSON, MARTHA R., Extension Assistant Director, 1991. B.S., Georgia Col., M.S., Florida State, Ed.D., North Carolina State

MCCORD, R. WARREN, Extension Assistant Director, 1972, 1976. B.S., North Alabama, M.S., Ph.D., Auburn

REEDUS, CAROLYN W., Extension Head, Personnel and Staff Development, 1975. B.S., M.S. Alabama A&M

ROYSTON, LLOYD, Extension Assistant to the Director, Marketing Relations, 1993. A.B. Talladega College, M.S., Ed.D., Tuskegee

RUFFIN, WILMA, Extension Assistant Director, 1985, 1994. B.S., Alabama A&M, M.S., Alabama, Ph.D., Minnesota

SIMPSON, EUGENE, Extension Head, Computer Technology, 1983, 1984. B.S., Ph.D., Mississippi State

SMITH, JAMES L., Extension Associate Director, Human Resources, 1965, 1991. B.S., Edward Waters, M.S., Tuskegee, Ph.D., Ohio State

SMITH, MIA H., Extension Coordinator, Administrative Services, 1992. B.S., M.B.A. AAMU

SMITH, WILLIAM G., Extension Associate Director, 1965, 1990. B.S., M.Ag., Ed.D., Auburn

STRAIN, W. L., Extension Assistant Director, Communications, 1955, 1991. B.S., M.Ed., Tuskegee, M.S., Wisconsin

WILLIAMS, RON, Extension Head, Program Planning and Development/Law Enforcement, 1988. B.S. Iowa State, M.A. Indiana

PROGRAM SUPPORT ASSIGNMENTS

ATKINS, BETH, Extension Development Specialist, 1995. B.S., Tennessee, M.A., Western Kentucky

BOOTH, LAURA, Extension Associate, Environmental Programs, 1993. B.S., Auburn

* These employees of the Alabama Cooperative Extension System are based at Auburn University. Other System employees are based at Alabama A&M University. Complete implementation of the unified Alabama Cooperative Extension System is underway and will define university relationships for all System employees.

** Titles and degrees appear elsewhere in catalog.

Alabama Cooperative Extension System

EVANS, DENNIS, Extension Program Evaluation Specialist, 1977, 1984. B.S., Northwestern, M.A., Ed.D., LSU
LaPRADE, JESSE C., Extension Environmental Specialist, 1990. B.S., VPI, M.S., North Carolina State, Ph.D., Florida
TEAGUE, RALPH J., Extension Management Information Coordinator, 1977, 1984. B.S., Auburn

ECONOMIC AND COMMUNITY DEVELOPMENT PROGRAM

CHESNUTT, J. THOMAS, Extension Tourism Specialist, 1990. B.S., Auburn, M.S., Washington State, Ed.D., Georgia
GAPASIN, CELEDONIA, Extension Community Development Specialist, 1973. B.S., M.S., Ph.D.
LARKIN, WILLIE D., Extension Community Development Specialist, 1984. B.S., M.Ed., Tuskegee, Ph.D., Ohio State
LEE, V. WILSON, Extension Economist, 1967, 1974. B.S., Auburn, M.S., Arizona
MECSKO, LISA, Extension County Health Council Coordinator, 1994. B.S. Montevallo, M.S., Auburn
STRAWN, HARRY B., Extension Economist, 1969, 1988. B.S., North Carolina, M.S., Ph.D., Tennessee
TAJEU, KATHLEEN S., Extension County Health Specialist, 1994. B.A., Syracuse, M.S., Ph.D., Cornell
WOOLBRIGHT, CAROL A., Extension Leadership Specialist, 1993. B.A., Mary Hardin-Baylor, M.Ed., Ph.D., Auburn, Ed.S., Georgia State

FAMILY AFFAIRS

TURNER, JO, Extension Program Specialist, 1987, 1994. B.S., M.S., Alabama, Ph.D., Purdue

NUTRITION AND EDUCATION PROGRAM

GUNTER, PEGGY A., Nutrition Education Program Analyst, 1978. B.S., South Alabama
JELINEK, SUZETTE M., Nutrition Network Coordinator, 1994. B.A., Loyola, M.S.L.I.R., Michigan, Ed.D. Auburn
MARSHALL, AUTUMN C., Nutrition Marketing Educator, 1996. B.S., David Lipscomb University, M.S. Texas A&M
PARNER, SONDRAL, Project Manager, Nutrition Education Program, 1993. B.A., Auburn

FORT RUCKER

BROOKS, RACHEL W., Extension Outreach Agent, 1993. B.S., M.S. Troy State

FORT MCCLELLAN

GRAVETT, CECILIA H., Extension Agent, Exceptional Family Members, 1987. B.S., M.S. Jacksonville State
WINGARD, SUSAN F., Extension Agent, Financial Planning & Assistance, 1980. B.S., North Alabama, M.S. Jacksonville State

4-H AND YOUTH

BENTLEY, MICHAEL R., (Columbiana) Extension 4-H Center Assistant Manager, 1991. B.S., M.Ed., Montevallo
COLEMAN, EDNA, Extension 4-H Specialist, 1981. B.S., M.B.A., Alabama A&M
COLLIER, TRACY, (Columbiana) Extension Environmental Educator, 1994. B.S., M.Ag., Auburn
COOK, JOHN A., Extension 4-H Program Specialist, 1980, 1991. B.S., M.S., Mississippi State, Ed.D., Auburn
DRAKEFORD, ROBERT, Extension Specialist, Volunteer Programs, 1993. B.S., Quinnipiac, M.R.P., M.S., Ed.D., North Carolina
GUTHRIE, C. TERRELL, (Columbiana) Extension 4-H Center Manager, 1966, 1988. B.S., Auburn, M.Ed., Mississippi State
LEE, MARISA K., Extension Associate, Environmental Programs, 1995. B.S., M.S. Auburn
RAYFIELD, M. KATHY, (Columbiana), Extension Computer Program Educator, 1994. B.S., Montevallo
ROBINSON, JACQUELYN, Extension 4-H Program Specialist, Educ. Design, 1993. B.S., Ed.D., Montevallo, M.Ed., Livingston
TATUM, JACK B., (Columbiana) Extension 4-H Center Assistant Manager, 1979, 1984. B.S., Auburn, M.S., Montevallo
WYCKOFF, LINDA C., (Columbiana) Extension Environmental Educator, 1994. B.S., Auburn

Army School Age and Teen Project

DUER, RONNIE S., Army Project Technical Specialist, 1995.
HORNE, HERBERT R., Army Project Coordinator, 1995.
REEVES, CHARLENE D., Army Project School Age Specialist, 1992.

AGRICULTURE, FORESTRY AND NATURAL RESOURCES

Agricultural Economics and Rural Sociology

BROWN, STEPHEN G., (Brewton) Extension Economist, Farm Business Management, 1990. B.S., M.S., Auburn
CREWS, JERRY R., Extension Economist, 1977, 1995. B.S., M.S., Georgia, Ph.D., Auburn
GOODMAN, WILLIAM ROBERT, Extension Economist, 1990. B.S., M.S., Auburn, Ph.D., Tennessee
HENSHAW, DOUGLAS M., (Belle Mina) Extension Economist, 1978. B.S., M.S., Kentucky
LISEC, ROBERT G., (Headland) Extension Economist, Farm Business Management, 1995. B.S., Peru State College, M.S., Nebraska
NOVAK, JAMES L., Extension Economist, 1985. B.S., M.S., New Hampshire, Ph.D., Clemson
PEPPER, WENDELL H., (Autaugaville) Extension Economist, Farm Business Management, 1985. B.S., Auburn, M.S., Illinois
PIERCE, JERRY S., (Scottsboro) Extension Economist, Farm Business Management, 1993. B.S., M.S., Auburn
PREVATT, JAMES WALTER, Extension Economist, 1991. B.S., M.S., Florida, Ph.D., Clemson
RUNGE, MAX W., Extension Associate, 1995. B.S., M.B.A., Auburn, M.S., Troy State
THOMPSON, NOEL A.D., Extension Data Analyst, 1980. B.S., Jackson State, M.S., Tuskegee
WALKER, KERRY, (Scottsboro), Extension Economist, Farm Business Management, 1993. B.S., M.S., Georgia
YOUNG, GEORGE J., Extension Economist & Farm Analysis Coordinator and Coordinator of International Programs for Extension, 1980, 1995. B.S., M.S., Illinois

Agricultural Engineering

CURTIS, LARRY, Extension Agriculture Engineer, 1976, 1988. B.S., M.S., Auburn
DONALD, JAMES O., Extension Agriculture Engineer, 1976, 1988. B.S.A.E., M.S.A.E., Georgia
HARKINS, DAVID, (New Brockton) Extension Associate, Environmental Management, 1993. B.S., Mississippi State
TUCKER, KEVAN, (Guntersville) Extension Associate, Environmental Management, 1993. B.S., Mississippi State
TYSON, TED W., Extension Agriculture Engineer, 1985. B.S., M.S., Georgia

Agronomy

BALL, DONALD M., Extension Agronomist, 1975, 1988. B.S., W. Kentucky, M.S., Ph.D., Auburn
BURDETT, ROBERT A., Extension Agronomist, 1968, 1988. B.S., M.S., Auburn, Ph.D., Mississippi State
BURMESTER, CHARLES H., (Belle Mina) Extension Agronomist, 1980. B.S., M.S., Auburn
DELANEY, DENNIS P., Extension Associate, Resource Conservation, 1980. B.S., Mich. State, M.S. Clemson
EVEREST, JOHN, Extension Weed Scientist, 1978, 1988. B.S., Alabama, M.S., Ph.D., Auburn
HAIRSTON, JAMES E., Extension Water Quality Scientist, 1989. B.S., Berry, Ph.D., Georgia
HARTZOG, DALLAS, (Headland), Extension Agronomist, 1966, 1988. B.S., M.S., Auburn
HIGGINS, JEFFERY M., Extension Turfgrass Specialist, 1997. B.S., M.S. Auburn, Ph.D. Clemson
MASK, PAUL L., Extension Agronomist, 1982, 1988. B.S., Ga. State, M.S., Georgia, Ph.D., Ohio State
MITCHELL, CHARLES C., JR., Extension Agronomist, 1984, 1991. B.S., B'ham Southern, M.S., Auburn, Ph.D., Florida
MONKS, C. DALE, Extension Crop Physiologist, 1993. B.S., Middle Tennessee State, M.S., Arkansas, Ph.D., Georgia
PATTERSON, MICHAEL, Extension Weed Scientist, 1985, 1991. B.S., M.S., Ph.D., Auburn

Animal Science

CORREA-GUMBE, JULIO, Extension Animal Science Specialist, 1988.
BLAYLOCK, ROBERT E., (Belle Mina), Extension Animal Scientist, 1976, 1979. B.S., M.S., Mississippi State
CORREA-GUMBE, JULIO, Extension Animal Scientist, 1988. B.S., University of Puerto Rico, M.S., Tuskegee, Ph.D., Michigan State
DAVIS, PAULA M., Extension Associate, 1993. B.S., Berea, M.S., Tennessee
EBERT, ROBERT A., Extension Animal Scientist, 1995. B.S., Kansas State, M.S., Auburn
FLOYD, JAMES G., Extension Veterinarian, 1988. B.S., West Point, D.V.M., LSU, M.S., Illinois
GIMENEZ, DIEGO M., Extension Animal Scientist, 1978, 1988. B.S., M.S., Ph.D., Florida
JOHNSON, JACQUELINE U., Extension Veterinarian, 1989. B.S. Tuskegee, M.S. North Carolina State, V.M.D., Pennsylvania
JONES, WILLIAM R., Extension Animal Scientist, 1975, 1988. B.S., Mississippi State, M.S., Ph.D., Virginia Tech
KRIESE, LISA A., Extension Animal Scientist, 1993. B.S., Cornell, M.S., Kansas State, Ph.D., Georgia
MCALL, CYNTHIA, Extension Animal Scientist, 1989. B.S., Tennessee, M.S., Ph.D., Texas A&M
MOSS, BUELON R., Extension Animal Scientist, 1983. B.S., Berea, Ph.D., Tennessee
OWSLEY, FRANK, Extension Animal Scientist, 1990. B.S., M.S., Texas A&M, Ph.D., Texas Tech
VAN DYKE, NORWOOD J., Extension Animal Scientist, 1978, 1984. B.S., M.S., Clemson, Ph.D., Auburn

Entomology

COBB, PATRICIA P., Extension Entomologist, 1978. B.S. Huntingdon, M.S., Ph.D., Auburn
FLANDERS, KATHY L., Extension Entomologist, 1995. B.S., Cornell, M.S., Ph.D., Minnesota
FOSHEE, WHEELER, Extension Associate, 1985, 1989. B.S., M.S., Ph.D. Auburn
FREEMAN, BARRY, (Belle Mina), Extension Entomologist, 1976, 1979. B.S., M.S., Georgia
McVAY, JOHN R., Extension Entomologist, 1976, 1988. B.S., N. Alabama, M.S., Auburn, Ph.D., Oklahoma State
OI, FAITH M., Extension Entomologist, 1995. B.S., M.S., Hawaii, Ph.D., Florida
SMITH, RONALD H., Extension Entomologist, 1972. B.S., M.S., Ph.D., Auburn
STROTHER, GENE, Extension Entomologist, 1973. B.S., M.S., Ph.D., LSU
WEEKS, JAMES R., (Headland), Extension Entomologist, 1975. B.S., M.S., Auburn

Fisheries

CLINE, DAVID J., (Oxford) Extension Aquaculturist, 1994. B.A., Colgate, M.A., Auburn
HOSKING, WILLIAM, (Mobile) Extension Marine Economist & Marine Programs Coordinator, 1977, 1982. B.S., M.S., Ph.D., Georgia
HYDE, CHRIS, (Belle Mina) Extension Aquaculturist, 1988. B.S., Centenary Col. of Louisiana, M.S., Auburn
MASSER, MICHAEL P., Extension Aquaculturist Specialist, 1989. B.S., Texas, M.S., Incarnate Word, Ph.D., Texas A&M
PERKINS, BRIAN, (Mobile) Extension Seafood Technologist, 1985. B.S., Georgia State, M.S., LSU
SZEDLMAYER, STEPHEN T., (Mobile) Extension Recreation Aquaculturist, 1990. B.A., Millersville, M.S., S. Florida, Ph.D., VIMS
WALLACE, RICHARD K., (Mobile) Extension Marine Specialist, 1983, 1988. B.S., Ohio Wesleyan, M.S., Puerto Rico, Ph.D., Auburn
WHITIS, GREGORY, (Greensboro) Extension Aquaculturist, 1987. B.S., Iowa State, M.A., Auburn

Forestry

BLISS, JOHN C., Extension Forester, 1990, 1991. B.S., M.S., Ph.D., Wisconsin
BRINKER, RICHARD W., Extension Forester & Coordinator, Forestry Extension, 1988. B.S., Ph.D., LSU, M.S., Southern Mississippi
CARINO, HONORIO F., Extension Forester, 1981, 1982. B.S., M.S., Philippines, Ph.D., Minnesota
DUBOIS, MARK R., Extension Forester, 1994. B.S., Kansas State, B.S., Arizona, M.S., Missouri, Ph.D., Mississippi State
FLYNN, KATHRYN, Extension Forester, 1992. B.S., Auburn, M.S., Ph.D., LSU

Alabama Cooperative Extension System

McNABB, KENNETH L., Extension Forester, 1989. B.S., M.S., Southern Illinois, Ph.D., Florida
MUEHLENFELD, KENNETH J., Director, Forest Products Development Center, 1989. B.S., Missouri, M.S., Georgia Tech

Horticulture

BAUSKE, ELLEN, Extension Associate, 1994. B.A., Cornell, M.S., Ph.D., Illinois
GOFF, WILLIAM D., Extension Horticulturist, 1982, 1988. B.S., M.S., Mississippi State, Ph.D., Clemson
HESSELEIN, CHARLES, (Mobile), Extension Horticulturist, 1994. B.S., Cal Poly, M.S., Univ of CA, Davis
HIMMELRICK, DAVID G., Extension Horticulturist, 1989. B.S., Plymouth State, M.S., W. Virginia, Ph.D., New Hampshire
KEMBLE, JOSEPH M., Extension Horticulturist, 1993. B.S., Delaware, M.S., Ph.D., North Carolina State
MUSGROVE, MARY BETH, Extension Associate, 1994. B.S., North Alabama, M.S., Auburn
POWELL, ARLIE A., Extension Horticulturist, 1978, 1988. B.S., M.S., Ph.D., Florida
SABOTA, CATHY, Extension Horticulturist, 1983. B.S., M.S. Texas Tech, Ph.D. Univ of Illinois
TILT, KENNETH, Extension Horticulturist, 1989. B.A., M.S., E. Carolina, B.S., Ph.D., North Carolina State
WILLIAMS, JAMES D., Extension Horticulturist, 1984. B.S., M.S., Auburn, Ph.D., Ohio State

Plant Pathology

COLLINS, DANIEL J., Extension Plant Pathologist, 1989. B.S., Jackson State, M.S., Alabama A&M, Ph.D., Missouri
GAZAWAY, WILLIAM S., Extension Plant Pathologist, 1976, 1988. B.S., Mississippi State, Ph.D., Texas A&M
HAGAN, AUSTIN, Extension Plant Pathologist, 1980, 1988. B.S., Indiana-Penn, M.S., Ph.D., Ohio St
MULLEN, JAQUELINE, Extension Plant Pathologist & Diagnostician, 1979, 1984. B.A., Northeastern, M.S., Ph.D., Cornell
SIKORA, EDWARD J., Extension Plant Pathologist, 1992. B.S., Eastern Illinois, M.S., Ph.D., Illinois

Poultry Science

BILGILI, SACIT F., Extension Poultry Scientist, 1985. D.V.M., Ankara, M.S., Oregon, Ph.D., Auburn
BLAKE, JOHN P., Extension Poultry Scientist, 1989. B.S., Penn State, M.S., Maine, Ph.D., VPI
ECKMAN, MICHAEL, Extension Poultry Scientist, 1977, 1983. B.S., M.A., N. Colorado, Ph.D., Auburn
HESS, JOSEPH B., Extension Poultry Scientist, 1992. B.S., Penn State, M.S., Ph.D., Georgia

Wildlife

ARMSTRONG, JAMES B., Extension Wildlife Scientist, 1990. B.S., Freed-Hardeman, M.S., Abilene Christian, Ph.D., VPI
STRIBLING, HARRY L., Extension Wildlife Scientist, 1985. B.S., South Carolina, M.S., Clemson, Ph.D., North Carolina State

HUMAN SCIENCES

Consumer Affairs

AYCOCK, GEORGIA P., Extension Resource Management Specialist, 1974, 1987. B.S., M.Ed., Auburn
CENTRALLO, CAROL, Extension Apparel & Textile Management Specialist, 1992. B.S., North Alabama, M.S., Ph.D., Minnesota

Family & Child Development

ABELL, ELLEN, Extension Family & Child Development Specialist, 1993. B.A., Illinois, M.A., Ph.D., Washington State
GODDARD, H. WALLACE, Extension Family & Child Development Specialist, 1990. B.S., M.S., Brigham Young, Ph.D., Utah State
WADDELL, FRED, Extension Family Resource Management Specialist, 1988. B.A., Kentucky, M.S., Kansas State, Ph.D., VPI

Nutrition & Foods

CHESNUTT, J. THOMAS, Extension Tourism Specialist, 1990. B.S., Auburn, M.S., Washington State, Ed.D., Georgia
CRAYTON, EVELYN F., Extension Foods & Nutrition Specialist, 1977, 1987. B.S., Grambling, M.S., St. Louis, Ph.D., Auburn
STRUEMPLER, BARBARA J., Extension Nutritionist, 1984. B.S., Nebraska, M.S., Ph.D., Iowa State
WEESE, JEAN OLDS, Extension Food & Nutrition Specialist, 1993. B.S., M.Ed., Eastern Kentucky, Ph.D., Tennessee

EXTENSION COMMUNICATIONS

DUPREE, CHARLES B., Extension Communications Specialist, 1990. B.F.A., Alabama, M.F.A., Memphis State
HALL, JEAN, Electronic Design and Applications, 1987. B.S. Kent State, M.S. Alabama A&M
HAMBLEY, RICHARD, Extension Communications Associate, 1975, 1990. B.F.A., Auburn
JUENCKE, DON E., Photographer/Media Assistant Specialist, 1974. B.S., M.S. Alabama A&M
LANGCUSTER, JR., JAMES C., Extension Communications Specialist, 1985. B.A., N. Alabama, M.A., Alabama
MORGAN, M. VIRGINIA, Extension Communications Specialist, Educational Methods, 1992. B.S., Auburn, M.S., Appalachian State, Ed.D., Vanderbilt
WHATLEY, CAROLYN, Extension Communications Specialist, 1990. B.A., M.A., Ed.D., Auburn

ADMINISTRATIVE/SUPPORT

ADRIAN, ANNE M., User Services Manager, 1987, 1991. B.S., M.S., Auburn
BARNES, OWEN, Producer/Director II, 1993. B.A., Auburn

Alabama Cooperative Extension System

BRADY, BOYD, DHIA Coordinator, 1989. B.S., Auburn
CHILDRESS, JAMES, Print Shop Manager, 1974.
CREWS, KAREN M., Extension Administrative Services Associate, 1975, 1980. B.S., LaGrange
DAVIS, JONATHAN, Network Support Manager, 1987, 1991. B.S., Auburn
DOYLE, ELLEN, U., Specialist III, User Services, 1994. B.S., Auburn
EILAND, ALAN D., Art Designer II, 1980. B.F.A., Auburn
HALL, JEAN, Electronic Design and Applications, 1987.
HARVEY, JAMES, Editor, TV Post Production, 1988. B.S., Troy State
HILL, MERRELL, Supervisor, Inventory, 1988. B.S., SE Oklahoma State
JOHNSON, JANICE W., Supervisor, ACES Personnel, 1973, 1996.
JUDE, PAMELA, Data Analyst, 1989.
LAWRENCE, MARGARET C., Producer/Director II, 1994. A.B.J. Georgia
LIGHTFOOTE, MARIO C., Producer/Director IV, 1992. B.A., Clarke-Atlanta, M.A., American
LITTLE, DEBORAH M., Specialist, ACES Budget, 1982. B.A., Faulkner, M.S. Auburn
MASSER, JULIE M., Specialist III, Network Support, 1994. B.S., Purdue, M.Ed., Auburn
MURPHY, ANN, Extension Assistant Editor, 1990. B.S., Auburn
NOBLE, SUSAN M., Specialist, Personnel, 1990. B.A., Ohio State.
PRESLEY, WILLIAM, Lead User Services Specialist, 1988, 1991. B.S., Livingston
REYNOLDS, DONNA, Extension Assistant Editor, 1990. B.S., Troy State
RUMPH, MARK A., Assistant, Agriculture Programs, 1996. B.S. Huntingdon
SEAY, DONNA M., Art Designer II, 1991. B.F.A., Auburn, M.F.A., Oregon
STRIBLING, LEIGH ANN, Extension Assistant Editor, 1994. B.A., M.A., South Carolina
SYDNOR, SHERRY L., Administrative Assistant III, 1990. B.S., Auburn
WILSON, LYNN B., Assistant Facilitator, 1984.
WORDEN, TASHA J., Specialist, ACES Budget, 1989.
WYNN, DONNA J., Specialist, ACES Budget, 1978.

FIELD PERSONNEL - District Staff

BLOUNT, LAVERNE, District Extension Coordinator, 1983, 1986. B.S., M.S., Alabama A&M, Ph.D., Ohio State
DOLLMAN, REBECCA, District Extension Coordinator, 1974, 1991. B.S., Auburn, M.S., Alabama, Ph.D. Auburn
IFILL, JACQUELYN B., District Extension Coordinator, 1968, 1996. B.S., Tuskegee, M.Ed., Alabama A&M
MOBLEY, BARBARA, District Extension Coordinator, 1966, 1996. B.A., M.A., Mississippi
OGBURN, CHARLES B., District Extension Coordinator, 1977, 1996. B.S., M.S., VPI, Ph.D. Auburn
RICE, D. RAY, District Extension Coordinator, 1976, 1991. B.S., M.S., Auburn, Ph.D. Alabama
SPEAKMAN, GENTA S., District Extension Coordinator, 1966, 1996. B.S., M.S., Ed.S. Auburn
TEAGUE-JOHNSON, CLARENE, District Extension Coordinator, 1971, 1996. B.S., M.S. Alabama A&M
WADDY, P.H., JR., District Extension Coordinator, 1964, 1976. B.S., Alabama A&M, M.S., Tuskegee, Ph.D., Ohio State

County Staffs

Autauga County – Prattville

CONNER, VALERIE Y., County Extension Coordinator, 1983, 1994. B.S., Montevallo, M.S., Troy State
JACKSON, KATIE W., Area EFNEP Agent, 1973, 1986. B.S., Alabama, M.S., Montevallo
MARTIN, STEVEN M., County Extension Agent, 1992, 1996. B.S., Auburn, M.S. Troy State
THOMAS, YVONNE B., County Extension Agent, 1994. B.S., Troy State, M.S., Tuskegee

Baldwin County – Bay Minette

KIRKMAN, GRACE, County Extension Agent, 1975, 1982. B.S., M.S., Alabama
KLING, EMILY, County Extension Agent, 1994. B.A., Principia, M.S., Michigan
PETERSON, DENNIS, County Extension Agent, 1973, 1985. B.S., M.S., Auburn
TUNNELL, LYNELLE ED, County Extension Coordinator, 1973, 1984. B.S., M.Ed., Auburn

Barbour County – Clayton

HUNTER, RUTH H., County Extension Agent, 1974, 1987. B.S., N. Alabama
MASON, CHARLES R., County Extension Coordinator, 1980, 1996. B.S., M.S., Auburn

Bibb County – Centreville

HERNDON, HELEN, County Extension Coordinator, 1989, 1996. B.S., M.S., Tuskegee

Blount County – Oneonta

GRAVES, NANCY G., County Extension Agent, 1992. B.S., Auburn
HARPER, JANICE A., County Extension Agent, 1980, 1987. B.S., M.S., Alabama A&M
PORCH, DANIEL W., County Extension Agent, 1990. B.S., M.S., Auburn
REID, BENNIE CAROL, County Extension Coordinator, 1985, 1992. B.S., Samford, M.A.T., Montevallo, Ph.D. Auburn

Bullock County – Union Springs

SMITHERMAN, JIMMY D., County Extension Coordinator, 1978, 1987. B.S., M.S., Auburn
YOUNG, ARMSTEAD, County Extension Agent, 1973, 1994. B.S., M.S., Tuskegee

Butler County – Greenville

LUMAN, LINDA, County Extension Coordinator, 1982, 1996. B.S., Auburn, M.S., Florida State
WILLIAMS, WILLIE, County Extension Agent, 1993, 1996. B.S., Miles, M.S., Alabama A&M

Calhoun County – Anniston

CHAPPELL, ISAAC B., County Extension Agent, 1994. B.S., M.S., Tuskegee
DOROUGH, HENRY, County Extension Agent, 1989. B.S., M.S., Auburn
LACKEY, I. JANNETTE, County Extension Coordinator, 1965, 1996. B.S., Auburn, M.S., Tennessee
SARRO, RUTH G., County Extension Agent, 1980, 1985. B.S., Auburn, M.S., Alabama
WEST, DAVID H., County Extension Agent, 1994. B.S., M.S., Auburn
WILSON, MAZIE, County Extension Agent, 1972, 1983. B.S., Alabama A&M, M.A.T., Montevallo

Chambers County – LaFayette

HENRY, DOLLIS A., County Extension Agent, 1992, 1996. B.S., Oakwood, M.S. Alabama State
JONES, BRENDA, County Extension Coordinator, 1971, 1988. B.S., Jacksonville State M.S., Montevallo
KUYKENDALL, LEONARD L., County Extension Agent, 1979, 1992. B.S., Auburn, M.S., Murray State

Cherokee County – Centre

DERRICK, DAVID E., County Extension Agent, 1978, 1987. B.S., Auburn
GLASS, LINDA A., County Extension Coordinator, 1978, 1996. B.S., Alabama A&M, M.S., Alabama

Chilton County – Clanton

BROWN, TOMMY J., County Extension Coordinator, 1971, 1988. B.S., M.S., Auburn
GRAY, GARY, County Extension Agent, 1993, 1996. B.S., Alabama, M.S., Auburn
NELSON, CALLIE N., County Extension Agent, 1993, 1996. B.S., Alabama A&M
WEST, GAY, County Extension Agent, 1991. B.S., Montevallo, M.A., Alabama

Choctaw County – Butler

ALBERSON, ELAINE B., County Extension Agent, 1988, 1992. B.S. Samford, M.S., Livingston
OLLISON, JOHN, County Extension Agent, 1981, 1996. B.S., Alabama A&M
SHIELDS, ELAINE B., County Extension Coordinator, 1982, 1989. B.S., Alabama, M.Ed., Livingston

Clarke County – Grove Hill

ARTHUR, JOE ANN, County Extension Coordinator, 1967, 1984. B.S., M.S. Mississippi, Ed.S., Mississippi State
BREWER, JACK R., County Extension Agent, 1991, 1994. B.S., M.Ed., Auburn

Clay County – Ashland

FARROW, TOM, County Extension Coordinator, 1970, 1981. B.S., M.Ed., Auburn
FUTRAL, THOMAS D., County Extension Agent, 1985, 1988. B.S., M.Ed., Auburn
MOOREHEAD, MARSHA, County Extension Agent, 1976, 1989. B.S., M.S., Auburn

Cleburne County – Heflin

MATHEWS, ELEANOR, County Extension Coordinator, 1984, 1992. B.S., Auburn, M.S., Jacksonville State

Coffee County – New Brockton

COFFEY, SANDRA T., County Extension Coordinator, 1972, 1994. B.S., Tennessee, M.S., Auburn
HUGHES, ANGELA G., County Extension Agent, 1973, 1988. B.S., Alabama
PETCHER, RICHARD, County Extension Agent, 1988, 1996. B.S., M.S., Auburn
TABB, GEORGE L., County Extension Agent, 1995. B.S., Alabama A&M, M.S., Troy State
WINDHAM, STANLEY, County Extension Agent, 1983, 1991. B.S., Colorado State, M.Ed., Mississippi State

Colbert County – Tuscumbia

ANDREWS, CHARLES E., County Extension Agent, 1973, 1988. B.S., Tuskegee
EARWOOD, KIMBERLY A., County Extension Agent, 1992, 1996. B.S., North Alabama, M.S., Montevallo
KON, DAVID, County Extension Agent, 1994. B.S., M.S., Auburn
McDONALD, TERESA C., County Extension Coordinator, 1976, 1992. B.S., M.Ed., Alabama A&M
POTTER, DANNY J., County Extension Agent, 1973, 1986. B.S., Auburn, M.S. Miss State

Conecuh County – Evergreen

BROGDEN, EMILY H., County Extension Coordinator, 1980, 1989. B.S., Auburn, M.S., Livingston
CASEY, MICHAEL S., County Extension Agent, 1991, 1992. B.S., M.S., Auburn

Coosa County – Rockford

LUKER, MELINDA, County Extension Coordinator, 1978, 1988. B.S., M.S., Auburn
VINES, ROGER C., County Extension Agent, 1983, 1991. B.S., Auburn, M.S., LSU

Covington County – Andalusia

DURR, WILLIE, County Extension Agent, 1979, 1992. B.S., M.S., Alabama A&M
MASKE, KIMBERLY A., County Extension Agent, 1994. B.S., M.S., Auburn
SIMON, CHARLES M., County Extension Coordinator, 1989. B.S., M.S., Auburn

Crenshaw County – Luverne

BRYAN, DEREK F., County Extension Agent, 1992. B.S., M.S., Auburn
HOOKS, LATHAN D., County Extension Coordinator, 1971, 1982. B.S., M.S., Auburn
SAFFOLD, HELEN J., County Extension Agent, 1977, 1986. B.S., Alabama A&M, M.S., Tenn. State
WHITE, GAYLE C., County Extension Agent, 1973, 1984. B.S., M.S., Auburn

Cullman County – Cullman

COLE, ELAINE W., County Extension Agent, 1973, 1983. B.S., M.A., Alabama
HODGES, R. GREGG, County Extension Coordinator, 1975, 1985. B.S., M.S., Mississippi State, Ed.S., Alabama
PINKSTON, CHARLES B., County Extension Agent, 1983, 1992. B.S., Auburn, M.S., Mississippi State

Dale County – Ozark

AGEE, THOMAS, County Extension Agent, 1991. B.S., Alabama A&M
WILLIAMS, TERESA Z., County Extension Coordinator, 1980, 1991. B.S., Montevallo, M.Ed., Auburn

Dallas County – Selma

BATES, HARRIET R., County Extension Coordinator, 1974, 1985. B.S., M.Ed., Alabama State
JOHNSTON, EDWARD A., County Extension Agent, 1994. B.S., Miles, M.S. Auburn
YATES, RUDY P., County Extension Agent, 1994. B.S., M.S. Auburn

DeKalb County – Fort Payne

GLOVER, TONY, County Extension Coordinator, 1984, 1996. B.S., M.S., Auburn
SHACKELFORD, TERRY L., County Extension Agent, 1974, 1984. B.S., M.S., Alabama A&M
WALDRUP, ANNETTE M., County Extension Agent, 1977, 1986. B.S., Jacksonville State, M.A., Alabama

Elmore County – Wetumpka

BEAUCHAMP, RALPH R., County Extension Agent, 1980, 1988. B.S., M.Ag., Auburn
KHAN, TARANA, Area EFNEP Agent, 1995. B.S., Principia College, M.S., Univ of Michigan
TANKERSLEY, MARILEE, County Extension Coordinator, 1975, 1996. B.S., M.S., Auburn
TURNER, GWENDOLYN, County Extension Agent, 1968, 1982. B.S., Alabama A&M

Escambia County – Brewton

BIVINS, CAROLYN F., County Extension Agent, 1974, 1988. B.S., Tuskegee, M.S., Livingston
FARRIOR, OLIN, County Extension Coordinator, 1982, 1990. B.S., Auburn, M.S., Mississippi State

Etowah County – Gadsden

GREGG, TINSLEY H., County Extension Agent, 1982, 1992. B.S., M.Ag., Auburn
HARDIN, MONTINE G., County Extension Agent, In Training, 1988. B.S., Auburn
JORDAN, MARY L., County Extension Agent, 1978, 1987. B.S., M.S., Auburn
MURRAY, GARY E., County Extension Coordinator, 1974, 1996. B.S., M.S., Auburn
TODD, JIMMY G., County Extension Agent, 1992. B.S., Auburn, M.S., LSU

Fayette County – Fayette

GRIFFITH, WARREN, County Extension Agent, 1983, 1991. B.S., Auburn, M.S., Mississippi State
WEAVER, JOAN R., County Extension Coordinator, 1977, 1991. B.S., M.S., Mississippi State

Franklin County – Russellville

GULLATTE, DONNA, County Extension Agent, 1991, 1996. B.S., Alabama A&M
HOSEA, SANDRA W., County Extension Agent, 1973, 1996. B.S., Alabama A&M
REED, TIMOTHY, County Extension Coordinator, 1984, 1988. B.S., M.S., Auburn, Ph.D., Clemson
TEACHER, TOMMIE B., County Extension Agent, 1993, 1996. B.S., M.S. Alabama A&M
THOMPSON, KAREN M., County Extension Agent, 1974, 1986. B.S., Montevallo, M.S., Alabama

Geneva County – Geneva

BALTIKAUSKI, MARY N., County Extension Coordinator, 1979, 1996. B.S., M.S., Auburn
SARTAIN, LINDA E., County Extension Agent, 1978, 1987. B.S., Auburn

Greene County – Eutaw

BURGESS, KIMBERLY, County Extension Agent, 1994. B.S., North Alabama
DATCHER, WILLIE E., County Extension Agent, 1984, 1991. B.S., Alabama A&M
MOHLAHLANE, PHIL, County Extension Coordinator, 1991, 1996. B.S., M.S., Tuskegee

Hale County – Greensboro

CLARY, JAMEY, County Extension Coordinator, 1974, 1991. B.S., M.S., Auburn
LEWIS, JOVITA L., Area EFNEP Agent, 1989, 1994. B.S., Auburn

Henry County – Abbeville

WHITE, PATSY M., County Extension Coordinator, 1970, 1996. B.S., M.S., Troy State
WIGGINS, MELISA L., County Extension Agent, 1994. B.S., Montevallo

Houston County – Dothan

BIRDSONG, WILLIAM, County Extension Agent, 1991, 1994. B.S., M.S., Auburn
HUDSON, RICKY G., County Extension Agent, 1992. B.S., Auburn
JAMES, ROSALIND R., County Extension Agent, 1980, 1990. B.S., M.Ed., Tuskegee
MEADOWS, CLAUDIA, County Extension Agent, 1971, 1984. B.S., Auburn, M.S., Troy State
MURPHY, RICHARD W., County Extension Agent, 1978, 1985. B.S., M.S., Troy State
VESTER, REAFIELD, County Extension Coordinator, 1966, 1986. B.S., Ala. A&M, M.S., Florida

Jackson County – Scottsboro

ROGERS, GOODRICH, County Extension Coordinator, 1986, 1996. B.S., Auburn, M.S. Alabama
SHARP, JAMES A., County Extension Agent, 1973, 1984. B.S., Auburn, M.S., Alabama A&M
TAPLEY, LEWIS L., County Extension Agent, 1981, 1994. B.S., Auburn

Jefferson County – Birmingham

GOODGAME, PATRICIA C., Area EFNEP Agent, 1989, 1995. B.S., Auburn, M.S., Jacksonville State
HUBBARD, DAVID H., County Extension Agent, 1978, 1989. B.S., M.Ag., Auburn
QUICK, LAWRENCE E., County Extension Agent, 1986, 1994. B.S., M.S., Auburn
RAMSEY, JACKIE M., County Extension Coordinator, 1973, 1996. B.S., Tennessee Tech, M.S., Alabama A&M
STRITIKUS, GEORGE R., Area Extension Agent, 1977, 1992. B.S., M.S., Auburn
WISSINGER, JOANN SMITH, County Extension Agent, 1978, 1987. B.S., M.S., Alabama

Lamar County – Vernon

ROBINSON, DAVID W., County Extension Agent, 1978, 1989. B.S., Mississippi State, M.Ed., Mississippi State
WASHINGTON, MAC D., County Extension Coordinator, 1979, 1996. B.S., Alabama A&M, M.S., Ohio State

Lauderdale County – Florence

ANDREWS, MARY J., County Extension Agent, 1981, 1996. B.S. Alcorn State
ARMSTRONG, RANDALL, County Extension Agent, 1974, 1990. B.S., M.S., Auburn
BECK, MARIAN, County Extension Agent, 1993, 1996. B.S., Alabama A&M, M.S., Northern Illinois
HARPER, SANDRA O., County Extension Agent, 1970, 1982. B.S., M.S., N. Alabama
HUGHES, ROBERT T., County Extension Coordinator, 1958, 1985. B.S., Alabama A&M, M.S., Tuskegee
LANE, RONALD D., County Extension Agent, 1973, 1985. B.S., M.S., Auburn
PUGH, MACK A., County Extension Agent, 1978. B.S., M.S. Alabama A&M
SIMS, THEMKA, County Extension Agent, 1991, 1996. B.S., Alabama A&M
WISSERT, LELIA C., County Extension Agent, 1992. B.S., Auburn. M.S., LSU

Lawrence County – Moulton

BUCHANAN, HENRY J., County Extension Agent, 1970, 1989. B.S., M.A., Alabama A&M
JACKSON, JOE E., County Extension Agent, 1972. B.S., M.S. Alabama A&M
PINION, JAMES E., County Extension Coordinator, 1966, 1986. B.S., M.Ed., Auburn
POOL, MARTHA H., County Extension Agent, 1966, 1983. B.S., Jacksonville State, M.Ed., N. Alabama
ROBINSON, LINDA, County Extension Agent, 1991. B.S., M.S., Alabama A&M
STANTON, CATHERINE, County Extension Agent, 1992. B.S. Kent State

Lee County – Opelika

BROWNE, CHARLES, County Extension Agent, 1989. B.S., Auburn
CARPENTER, ANNE B., County Extension Agent, 1982, 1989. B.S., M.S., Auburn
CLARY, JEFFREY, County Extension Coordinator, 1973, 1981. B.S., M.Ed., Auburn
FORT, MATTIE, County Extension Agent, 1974, 1987. B.S., Alabama A&M, M.S., Tuskegee
SPEARS, BOBBY G., County Extension Agent, 1977, 1988. B.S., M.Ag., Auburn

Limestone County – Athens

CHAPMAN, LLOYD D., County Extension Agent, 1992, 1995. B.S., M.Ed., Auburn
CHRISTOPHER, REETA A., County Extension Agent, 1980, 1987. B.S., Tennessee
DAVIS, MICHAEL A., County Extension Agent, 1994, 1996. B.S., M.S., Auburn
GRISSOM, CURTIS L., County Extension Coordinator, 1976, 1988. B.S., M.S., Auburn
TIBBS, EUNICE P., County Extension Agent, 1973, 1987. B.S., M.S., Alabama A&M

Lowndes County – Hayneville

CARROLL, PATRICIA E., County Extension Agent, 1992. B.S., Auburn
DANIEL, DAVID L., County Extension Coordinator, 1972, 1984. B.S., Alabama A&M, M.Ed., Tuskegee

Macon County – Tuskegee

PULLIAM, JOHN S., County Extension Coordinator, 1980, 1996. B.S., Tuskegee, M.S., Alabama A&M

Madison County – Huntsville

BEARDEN, ROSETTA, County Extension Agent, 1990, 1996. B.S. Alabama A&M
COFFEE, VICTORIA M., County Extension Coordinator, 1973, 1996. B.S., M.S., Alabama A&M
EDMOND, JUDY, Extension Associate, 1995. B.S. Alabama A&M
ELLIOTT, ALYCE B., County Extension Agent, 1972, 1984. B.S., Alabama A&M
HALL, MARK H., County Extension Agent, 1978, 1987. B.S., M.S., Ed.S., Auburn
HARRIS, WALTER B., County Extension Agent, 1991, 1994. B.S., Alabama A&M
OAKES, SYLVIA, County Extension Agent, 1992, 1996. B.S. Alabama A&M
PINYAN, PAUL, County Extension Agent, 1988, 1996. B.S., Auburn, M.S., Alabama A&M
RODGERS, WALTER L., County Extension Agent, 1988. B.S., Alabama A&M
SMITH, TYRONE, County Extension Agent, 1994. B.S. Alabama A&M

Marengo County – Linden

NORWOOD, WILLIAM N., County Extension Coordinator, 1973, 1996. B.S., Alabama A&M, M.Ed., Tuskegee

Marion County – Hamilton

MURPHY, LISA, County Extension Agent, 1981, 1996. B.S., N. Alabama, M.S., Mississippi State
WALLACE, BOBBY J., County Extension Coordinator, 1979, 1989. B.S., Auburn, M.Ed., Mississippi State

Marshall County – Guntersville

DOWNING, LELIA, County Extension Agent, 1981. B.S., M.S. Tuskegee
HOWARD, CHARLES, County Extension Agent, 1979, 1988. B.S., Auburn, M.S., Mississippi State
WHEELER, EDDIE J., County Extension Agent, 1978. B.S., M.S. Alabama A&M
WOOD, FRANKLIN H., County Extension Coordinator, 1963, 1977. B.S., M.Agr., Auburn

Mobile County – Mobile

BARTON, MYRA N., County Extension Agent, 1968, 1982. B.S., Montevallo, M.S., S. Alabama
DAY, MARJORIE S., County Extension Agent, 1972, 1984. B.S., Auburn, M.S., Alabama
GREER, ANDREW D., County Extension Agent, 1973, 1985. B.S., Auburn, M.S., S. Alabama
HARTSELLE, JANE T., County Extension Agent, 1992, 1996. B.S., Auburn, M.S., South Alabama
McCOLLUM, JULIA, County Extension Agent, 1975, 1988. B.S., North Carolina A&T, M.S., Southern Mississippi
MILES, JAMES, County Extension Agent, 1991, 1995. B.S., Alabama A&M
WHITE, ROBERT W., County Extension Coordinator, 1989, 1996. B.S., M.S., Auburn

Monroe County – Monroeville

HARTLEY, JEFFREY M., County Extension Agent, 1995. B.S., Montevallo
MUSSON, GLORIA R., County Extension Agent, 1983, 1991. B.S., Auburn, M.S., Southern Mississippi
OWENS, NATALIE T., Area EFNEP Agent, 1995. B.S., Oakwood
RUFFIN, RODIE M., County Extension Coordinator, 1973, 1989. B.S., M.Ed., Tuskegee

Montgomery County – Montgomery

BROWN, JUDITH, County Extension Agent, 1970, 1980. B.S., M.Ed., Auburn
COOK, SHARON H., County Extension Agent, 1990. B.S., M.Ed., Tuskegee
CRAFT, LARRY J., County Extension Agent, 1980, 1985. B.S., M.S., Auburn
HANKS, BOBBY L., County Extension Coordinator, 1974, 1990. B.S., M.S., Auburn
HEPBURN, VANESSA F., County Extension Agent, 1995. B.S., M.S., Auburn
OSBY, PARICO, County Extension Agent, 1993, 1996. B.S., Tuskegee, M.A., Central Michigan
PINKSTON, ANTHONY D., County Extension Agent, 1993, 1996. B.A., SUNY, M.S., Auburn

Morgan County – Hartselle

BRITNELL, RONALD W., County Extension Agent, 1976, 1987. B.S., Auburn, M.S., Alabama A&M
CARTER, WATKINS, County Extension Coordinator, 1967, 1987. B.S., M.S., Mississippi State
CHENAULT, JERRY, County Extension Agent, 1989. B.S., M.S., Auburn
DUTTON, JULIA A., County Extension Agent, 1977, 1988. B.S., Tennessee Tech, M.S., Alabama A&M
GAMBLE, KENNETH W., County Extension Agent, 1990, 1995. B.S., M.S., Alabama A&M
GOTTLER, THELMA E., County Extension Agent, 1974, 1984. B.S., M.A.T., Montevallo
MALONE, MARY P., County Extension Agent, 1994. B.S. N. Alabama

Perry County – Marion

DANIEL JONES, County Extension Coordinator, 1982, 1993. B.S., Tuskegee, M.S., Mississippi State

Pickens County – Carrollton

HENDERSON, THEODIS, County Extension Agent, 1975, 1991. B.S., Alabama A&M
PRESLEY-FULLER, PATTI, County Extension Agent, 1988, 1991. B.S., M.S., Mississippi State
WIGGINS, SAM, County Extension Coordinator, 1983, 1991. B.S., Auburn, M.S., Troy State

Pike County – Troy

BARNES, DENA L., County Extension Agent, 1973, 1986. B.S., M.Ed., Auburn
CARPENTER, DAVID B., County Extension Agent, 1975, 1982. B.S., Auburn
POWELL, TAMMARA A., County Extension Coordinator, 1978, 1990. B.S., Montevallo, M.S., Alabama A&M

Randolph County – Wedowee

HARDIN, CHRISTINE B., County Extension Coordinator, 1978, 1994. B.S., N. Alabama, M.Ed., Auburn
NELSON, ELAINE E., County Extension Agent, 1969, 1982. B.S., Jacksonville State, M.S., Auburn
PARRISH, RUSSELL, County Extension Agent, 1982, 1991. B.S., M.S., Auburn

Russell County – Phenix City

BICE, DONALD, County Extension Agent, 1970, 1986. B.S., M.S., Auburn
REEDER, JESSE A., County Extension Agent, 1992, 1995. B.S., M.S., Auburn
WILSON, BETTY H., County Extension Coordinator, 1971, 1983. B.S., Montevallo, M.Ed., Auburn

Shelby County – Columbiana

COLQUITT, RICKY, County Extension Agent, 1988, 1994. B.S., Auburn
PRUCNAL, PEGGY A., County Extension Coordinator, 1969, 1981. B.S., M.S., Jacksonville State
TREADAWAY, ANGELA, County Extension Agent, 1985, 1994. B.S., M.A.T., Montevallo
WYNN, NELSON, County Extension Agent, 1993. B.S., Alabama A&M

Alabama Cooperative Extension System

St. Clair County – Pell City

BRICE, DOROTHY P., County Extension Coordinator, 1970, 1986. B.S., Alabama A&M, M.A.T., Montevallo
DICKINSON, DONNA M., County Extension Agent, 1978, 1986. B.S., N. Alabama

Sumter County – Livingston

LAMPLEY, WILLIE H., County Extension Agent, 1986, 1996. B.S., Tuskegee, M.Ed., Alabama A&M
SHIRLEY, DENISE R., County Extension Coordinator, 1988, 1996. B.S., Auburn, M.S., Livingston

Talladega County – Talladega

JURRIANS, WANDA P., County Extension Coordinator, 1965, 1981. B.S., Jacksonville State, M.A., Auburn
WILLIAMS, JAMES R., Multi-County Extension Agent, 1980, 1989. B.S., M.S., Auburn

Tallapoosa County – Dadeville

MARTIN, NELDA B., County Extension Coordinator, 1971, 1996. B.S., Alabama, M.A., Auburn

Tuscaloosa County – Tuscaloosa

FORD, STANLEY W., County Extension Coordinator, 1979, 1996. B.S., Auburn, M.S., Mississippi State
GLADNEY, JONATHAN, County Extension Agent, 1994. B.S., M.S., Auburn
WEATHERLY, R. LLOYD, County Extension Agent, 1984, 1992. B.S., Murray State, M.Ag., Mississippi State

Walker County – Jasper

BOYD, DEWAREN, County Extension Agent, 1994. B.S., Auburn
CAIN, DANNY, County Extension Agent, 1992, 1995. B.S., M.S., Auburn
CHERRY C. HOVATTER, County Extension Agent, 1982, 1992. B.S., Auburn, M.S., Samford
SHIRLEY WHITTEN, County Extension Coordinator, 1981, 1991. B.S., Auburn, M.S., Alabama A&M

Washington County – Chatom

DICKEY, PATRICIA ANN, County Extension Agent, 1968, 1990. B.S., Alabama
THREATT, ARTHUR L., County Extension Coordinator, 1980, 1996. B.S., M.S., Alabama A&M

Wilcox County – Camden

HOLLINGER, BETTY B., County Extension Coordinator, 1977, 1987. B.S., M.A.T., Montevallo

Winston County – Double Springs

HENSHAW, MICHAEL, County Extension Coordinator, 1983, 1996. B.S., M.S., Kentucky

* Complete implementation of the unified Alabama Cooperative Extension System is underway and will define university relationships for all System employees.

Engineering Experiment Station Staff

MUSE, WILLIAM V., President, 1992. B.S., Northwestern State; M.B.A., Ph.D., Arkansas
MORIARTY, C. MICHAEL, Associate Provost & Vice President for Research (Adm.-VP Research), 1994. B.S.,
Carnegie Mellon; M.S., Cornell; Ph.D., Rochester
WALKER, WILLIAM F., Dean of Engineering, 1988. B.S., M.S., Texas; Ph.D., Oklahoma State
JOHN M. OWENS, Director, 1991. B.S.E.E., California, M.S., Ph.D., Stanford
REESE, BETTY C., Manager, Engineering Business and Finance, 1973, 1994. B.S., Alabama A&M

Dual roles are performed by faculty and staff of the College of Engineering who serve also as personnel of the Engineering Experiment Station.

Engineering Extension Service Staff

MUSE, WILLIAM V., President, 1992. B.S., Northwestern State; M.B.A., Ph.D., Arkansas
WILSON, DAVID, Associate Provost and Vice President for University Outreach, 1995. B.S., M.Ed., Tuskegee;
M.Ed., Ed.D., Harvard
WALKER, WILLIAM F., Dean of Engineering, 1988. B.S., M.S., Texas; Ph.D., Oklahoma State
BRYANT, JAMES O., Associate Dean for Extension, 1994. B.S., Ph.D., Clemson; M.S., Rice
PILSCH, THOMAS D., Director Engineering Extension/Auburn, 1994. B.S.E. Air Force; M.S.E., Princeton
AVERY, A. HENRY, Director, Engineering Extension/Birmingham, 1972, 1990. B.M.E., Auburn, M.S.I.M., Purdue
McCREARY, JERRY D., Industrial Extension Engineer, 1994. B.A., Olive; B.S., Florida International; Ph.D., Auburn
BLANKS, GEORGE W., Leadership Program Developer, 1988, 1996. B.A., Samford; M.A., Alabama-Birmingham
RIDGWAY, ELAINE H., Program Developer, 1989, 1993. B.S., Auburn
NAGLE, LUELLEN, Program Developer, 1972, 1976. B.S., Auburn
REUTTER, BELINDA D., Program Developer, 1994. B.A., Texas
SELLERS, J. LARRY, Program Developer, 1984. B.S., Auburn; M.S., Troy State
CARRINGTON, C. JAN, EPA Project Coordinator, 1986.

Dual roles are performed by faculty and staff of the College of Engineering who serve also as personnel of the Engineering Extension Service.

State Regulatory and Veterinary Services provided by the Alabama Department of Agriculture and Industries

C.S. Roberts Veterinary Diagnostic Laboratory

ALLEY, J. LEE *, State Veterinarian & Director, Division of Animal Industry, 1977. D.V.M., M.S., Auburn
HOERR, FREDERIC J. *, Laboratory Director, 1987. D.V.M., Ph.D., Purdue
D'ANDREA, GEORGE H. *, Pathology and Toxicology, 1980. D.V.M., M.S., Auburn
LAUERMAN, LLOYD H., JR. *, Microbiology, 1981. D.V.M., Washington State; Ph.D., Wisconsin
NUEHRING, LELAND P. *, Pathology, 1990. D.V.M., Iowa State; M.S., Ph.D., Georgia
ROWE, SARA E. *, Microbiology, 1992. B.S., D.V.M., M.S., Auburn

* Affiliate faculty in the College of Veterinary Medicine

Pesticide Residue Laboratory

BLOCH, JOHN A., Director, Division of Plant Protection and Pesticide Management, 1975. Ph.D., North Carolina
LECOMPT, OSCAR D., Laboratory Director, 1986. B.S., Troy State

State Chemical Laboratory

HESTER, LANCE M., Director, Division of Ag Commodities Inspection, 1991. B.S., Auburn
ADCOCK, WAYNE, Acting Director, 1975, 1996. B.S., Auburn

Enrollment Statistics

Enrollment By Curriculum – Fall Quarter, 1996

Curriculum	Undergraduate & 1st Prof.		Graduate		Total
	Male	Female	Male	Female	
COLLEGE OF AGRICULTURE					
Agricultural Business and Economics (AEC) (ECA)	89	24	11	8	132
Agricultural Engineering (AN)	—	—	4	—	4
Agricultural Journalism (AJ)	1	5	—	—	6
Agricultural Science (AG)	22	3	—	—	25
Agronomy and Soils (AY)	71	11	32	9	123
Animal and Dairy Sciences (ADS) (ADPV)	137	156	11	13	317
Entomology (ENT)	1	—	8	3	12
Fisheries and Allied Aquacultures (FAA) (FPV)	25	2	62	19	108
Horticulture (HF)	143	68	15	6	232
Integrated Pest Management (ENTI)	5	1	—	—	6
Plant Pathology (PLP)	—	—	15	8	23
Poultry Science (PH) (PHPV)	56	13	12	7	88
Rural Sociology (RSY)	3	2	—	—	5
TOTAL AGRICULTURE	533	285	170	73	1,081

SCHOOL OF ARCHITECTURE

Architecture (AR) (ARS)	125	35	—	—	160
Building Science (BSC)	149	15	15	2	181
Community Planning (CP)	—	—	8	7	15
Industrial Design (IND)	48	5	8	5	66
Interior Design (ID) (IDS)	3	21	—	—	24
Landscape Architecture (LA) (LAS)	38	11	—	—	49
Pre-Architecture (PAR)	219	78	—	—	297
Pre-Building Science (PBSC)	255	5	—	—	260
Pre-Industrial Design (PIND)	54	12	—	—	66
Pre-Interior Design (PID)	1	42	—	—	43
Pre-Landscape Architecture (PLA)	20	13	—	—	33
TOTAL ARCHITECTURE	912	237	31	14	1,194

COLLEGE OF BUSINESS

Accountancy (AC)	79	79	26	17	201
Business Administration (BA)	4	—	216	65	285
Economics (EC) (ECB)	17	3	35	8	63
Finance (FI)	91	34	1	1	127
Human Resource Management (HRMN)	13	16	—	—	29
International Business (IB)	111	157	—	—	268
Management Information Systems (MIS)	76	36	9	5	126
Management (MN)	63	27	26	7	123
Marketing (MK)	44	58	—	—	102
Operations Management (OM)	20	5	—	—	25
Pre-Business (PB)	1,316	729	—	—	2,042
Transportation (TN)	17	4	—	—	21
TOTAL BUSINESS	1,851	1,145	313	103	3,412

COLLEGE OF EDUCATION

Adult Education (VAD)	11	37	7	13	68
Agricultural Education (VAG)	30	—	5	1	36
Behavior Disturbance Education (RSB)	3	9	3	11	26
Business Education (VBU)	—	14	4	11	29
Community Agency Counseling (CCA)	—	—	4	20	24
Counseling Psychology (COP)	—	—	6	22	28
Counselor Education (COP) (CED)	—	—	9	9	18
Curriculum and Instruction (ACI)	—	—	7	12	19
Distributive Education (VDE)	5	3	1	—	9
Early Childhood Education (CEC)	5	313	—	20	338
Early Childhood Education for the Handicapped (RSC)	1	50	—	18	69
Educational Psychology (EPG)	—	—	7	15	22
Educational Leadership (AED)	—	—	1	2	3
Elementary Education (CEE)	34	441	7	37	519
Elementary/Secondary Admin. (AES)	—	—	10	17	27
Exercise Science (HES)	72	53	—	—	125
General Education (GCE)	33	67	—	—	100
Human Movement Studies (HPE)	2	3	53	33	91
Health Education (HEP)(HPR)	95	95	—	—	190
Higher Education Administration (AHE)	—	—	19	12	31
Home Economics Education (VHE)	—	8	—	4	12
Industrial Arts Education (VIA)	4	—	2	—	6
Learning Disabilities (RSL)	—	—	4	18	22

Enrollment Statistics

Curriculum	Undergraduate & 1st Prof.		Graduate		Total
	Male	Female	Male	Female	
Media Instructional Development (MID)	—	—	1	3	4
Media Specialist (MSE)	—	—	2	14	16
Mental Retardation Education (RSM)	2	14	2	9	27
Middle School English/Language Arts (CME)	—	—	1	—	1
Music Education (CNM)	31	26	5	6	68
N-12 Physical Education (HPEN)	47	34	—	—	81
Public School Counseling (CPS)	—	—	1	6	7
Reading Specialist (CNR)	—	—	—	4	4
Recreation Administration (HRA)	1	—	—	—	1
Rehabilitation and Special Education (RSE) (RSH) (RSX)	5	44	1	7	57
Rehabilitation Service Education (RSR)	13	47	8	22	90
School Psychology/Psychometry (CSP)	—	—	3	15	18
Secondary School - English (CSE)	23	71	12	26	132
Secondary School - Foreign Language (CSF)	1	16	3	5	25
Secondary School - Mathematics (CSM)	35	58	6	15	114
Secondary School - Science (CSC)	34	54	10	18	116
Secondary School - Social Science (CSS)	71	49	5	7	132
Speech Pathology Education (RSS)	—	6	—	—	6
Student Development (CSD)	—	—	1	8	9
Trade and Industrial Education (VTI)	1	—	4	—	5
Vocational and Adult Education (VED)	—	—	14	10	24
TOTAL EDUCATION	559	1,512	228	450	2,749

COLLEGE OF ENGINEERING

Aerospace Engineering (AE)	37	13	33	4	87
Agricultural Engineering (AN)	17	2	—	—	19
Aviation Management:					
Aviation Management (AM)	2	—	—	—	2
Basic Aviation Mgt. (AMN)	44	8	—	—	52
Professional Flight Mgt. (AMF)	57	6	—	—	63
Chemical Engineering (CHE)	215	94	69	8	386
Civil Engineering (CE)	296	72	58	14	440
Computer Engineering (CPE)	132	25	55	21	233
Computer Science (CS)	55	15	2	1	73
Electrical Engineering (EE)	230	37	76	9	352
Environmental Science (ENS)	57	44	—	—	101
Forestry Engineering (FYE)	10	1	—	—	11
Geological Engineering (GE)	1	3	—	—	4
Industrial Engineering (IE)	66	27	53	12	158
Manufacturing Systems Engr. (MFE)	—	—	3	—	3
Materials Engineering (MTL)	19	7	48	16	90
Mechanical Engineering (ME)	284	42	55	10	391
Pre-Aerospace Engineering (PAE)	49	12	—	—	61
Pre-Agricultural Engineering (PAN)	9	5	—	—	14
Pre-Aviation Management (PAM)	48	10	—	—	58
Pre-Chemical Engineering (PCHE)	85	56	—	—	141
Pre-Civil Engineering (PCE)	97	25	—	—	122
Pre-Computer Engineering (PCPE)	76	17	—	—	93
Pre-Computer Science (PCPS)	49	15	—	—	64
Pre-Electrical Engineering (PEE)	68	9	—	—	77
Pre-Engineering (PN)	165	50	—	—	215
Pre-Environmental Science (PENS)	10	15	—	—	25
Pre-Forestry Engineering (PFYE)	13	—	—	—	13
Pre-Geological Engineering (PIE)	—	1	—	—	1
Pre-Industrial Engineering (PIE)	13	12	—	—	25
Pre-Materials Engineering (PMTL)	5	—	—	—	5
Pre-Mechanical Engineering (PME)	89	12	—	—	101
Pre-Textile Chemistry (PTC)	1	2	—	—	3
Pre-Textile Engineering (PTE)	12	14	—	—	26
Pre-Textile Management and Technology (PTMT)	8	4	—	—	12
Textile Chemistry (TC)	6	6	—	—	12
Textile Engineering (TE)	26	11	—	—	37
Textile Management and Technology (TMT)	16	10	—	—	26
TOTAL ENGINEERING	2,367	682	452	95	3,596

SCHOOL OF FORESTRY

Forest Management (FY)	71	12	39	12	134
Forestry Operations (FYO)	3	—	—	—	3
Forestry Resources (FYR)	3	—	—	—	3
Pre-Forestry (PFY)	87	10	—	—	97
TOTAL FORESTRY	164	22	39	12	237

Enrollment Statistics

Curriculum	Undergraduate & 1st Prof.		Graduate		Total
	Male	Female	Male	Female	
SCHOOL OF HUMAN SCIENCES					
Apparel and Textiles (APT)	—	7	—	—	7
Consumer Affairs (CA)	—	—	1	8	9
Consumer and Family Economics (CFE)	—	1	—	—	1
Family and Child Development (FCD)	17	227	15	36	295
Fashion Merchandising (AMDP)(FM)	4	134	—	—	138
Hotel and Restaurant Management (HRM)	68	68	—	—	136
Interior Environments (INE)	3	125	—	—	128
Nutrition and Food Science (NFS)	13	167	11	23	214
TOTAL HUMAN SCIENCES	105	729	27	67	928
COLLEGE OF LIBERAL ARTS					
Anthropology (ANT)	13	18	—	—	31
Clinical Psychology (PGC)	—	—	16	36	52
Communication (COM)	69	102	15	17	203
Communication Disorders (CD)	5	128	2	59	194
Corporate Journalism (JMC)	10	20	—	—	30
Criminal Justice (CJ)	104	38	—	—	142
Criminology (CR)	33	18	—	—	51
English (EH)	64	109	23	49	245
French (FR, FLF)	4	12	3	8	27
General Curriculum - Economics (ECLA)	33	6	—	—	39
General Curriculum - Music (MULA)	3	2	—	—	5
General Curriculum - Theatre (THLA)	15	33	—	—	48
General Curriculum - Undeclared (CLA)	886	937	—	—	1,823
Geography (GY)	22	5	—	—	27
German (GR)	3	1	—	—	4
Health Services Administration (HSA)	38	84	—	—	122
History (HY)	107	46	47	24	224
International Trade - French (FRT)	4	10	—	—	14
International Trade - German (GRT)	6	5	—	—	11
International Trade - Spanish (SPT)	15	26	—	—	41
Journalism (JM)	44	40	—	—	84
Latin American Studies - Political Science (POL)	—	1	—	—	1
Philosophy (PA)	14	4	—	—	18
Political Science (PO)	121	86	12	6	225
Psychology (PG)	136	295	18	31	480
Public Administration (PUB)	15	6	22	22	65
Public Relations (PR)	35	112	—	—	147
Radio, Television & Film (RTF)	101	93	—	—	194
Religion (RL)	12	6	—	—	18
Russian Studies (RUS)	1	2	—	—	3
Social Work (SW)	4	64	—	—	68
Sociology (SOC)	9	17	—	—	26
Spanish (SP, FLS)	5	14	7	17	43
School of Fine Arts					
Art (AT)	80	131	1	4	216
Music (MU)	5	5	1	1	12
Theatre (TH)	5	8	—	—	13
TOTAL LIBERAL ARTS	2,021	2,484	167	274	4,946
SCHOOL OF NURSING					
Nursing (NUR)	21	135	—	—	156
Pre-Nursing (NS)	30	250	—	—	280
TOTAL NURSING	51	385	—	—	436
SCHOOL OF PHARMACY					
Doctor of Pharmacy (PYD)	11	15	—	—	26
Pharmacy (PY) (PYS)	89	200	9	2	300
Pharmacy Care Systems (PCS)	—	—	11	9	20
TOTAL PHARMACY	100	215	20	11	346
COLLEGE OF SCIENCES AND MATHEMATICS					
Applied Discrete Mathematics (ADM)	9	4	—	—	13
Applied Mathematics (AMH)	12	4	—	—	16
Applied Physics (PS)	1	—	—	—	1
Biochemistry (BCH)	10	16	—	—	26
Botany (BY)	5	12	12	7	36
Chemistry (CH)	18	14	43	25	100
Discrete and Statistical Sciences (DMS)	—	—	17	18	35
Earth Science (GES)	6	3	—	—	9
General Curriculum - Undeclared (GSM)	59	64	—	—	123
Geology (GL)	26	12	18	4	60
Laboratory Technology (LT)	3	13	—	—	16

Enrollment Statistics

Curriculum	Undergraduate & 1st Prof.		Graduate		Total
	Male	Female	Male	Female	
Marine Biology (MRB)	41	66	—	—	107
Mathematics (MH)	17	20	42	11	90
Medical Technology (MDT)	12	39	—	—	51
Microbiology (MB)	37	50	6	7	100
Molecular Biology (MOB)	18	15	—	—	33
Physics (PS)	23	1	36	4	64
Pre-Dentistry (PD)	35	18	—	—	53
Pre-Medicine (PM)	258	226	—	—	484
Pre-Optometry (OP)	9	21	—	—	30
Pre-Pharmacy (PPY)	75	169	—	—	244
Pre-Physical Therapy (PT)	36	102	—	—	138
Pre-Veterinary Medicine (PV)	69	182	—	—	251
Wildlife Science (WL)	67	42	11	2	122
Zoology (ZY)	29	41	29	20	119
TOTAL SCIENCES AND MATHEMATICS	875	1,134	214	98	2,321

COLLEGE OF VETERINARY MEDICINE

Anatomy and Histology (VAH)	—	—	1	1	2
Biomedical Sciences (BMS)	—	—	18	11	29
Large Animal Surgery and Medicine (VLA)	—	—	5	4	9
Pathobiology (VPB)	—	—	6	5	11
Physiology and Pharmacology (VPH)	—	—	2	3	5
Small Animal Surgery and Medicine (VSA)	—	—	3	4	7
Veterinary Medicine (VM)	163	200	—	—	363
TOTAL VETERINARY MEDICINE	163	200	35	28	426

INTERDEPARTMENTAL PROGRAMS

Physiology (IP)	—	—	1	—	1
Sociology (SY)	—	—	8	13	21
Textile Science (TS)	—	—	9	8	17
TOTAL INTERDEPARTMENTAL	—	—	18	21	39

TRANSIENTS AND AUDITORS

Transients and Auditors (AUD) (TR)	14	20	8	25	67
TOTAL TRANSIENTS AND AUDITORS	14	20	8	25	67

ALL UNIVERSITY

GRAND TOTAL	9,735	9,050	1,722	1,271	21,778
-------------	-------	-------	-------	-------	--------

SUMMARY BY CLASS LEVEL

Freshmen	2,621	2,673	—	—	5,290
Sophomores	1,889	1,879	—	—	3,768
Juniors	2,097	1,868	—	—	3,965
Seniors	3,015	2,437	—	—	5,452
Fifth Year	65	92	—	—	157
Other Undergraduates and 1st Professionals	52	101	—	—	153
Master's	—	—	1,037	809	1,846
Educational Specialists	—	—	1	10	11
Doctoral	—	—	653	408	1,061
Other Graduates	—	—	31	44	75
GRAND TOTAL	9,753	9,050	1,722	1,271	21,778

Enrollment By Alabama Counties – Fall Quarter, 1996

County	Male	Female	Total	County	Male	Female	Total
Autauga	70	60	130	Houston	203	168	371
Baldwin	236	212	448	Jackson	57	64	121
Barbour	69	62	131	Jefferson	1,110	1,125	2,235
Bibb	9	6	15	Lamar	11	11	22
Blount	34	35	69	Lauderdale	87	78	165
Bullock	17	20	37	Lawrence	22	16	38
Butler	39	27	66	Lee	804	810	1,614
Calhoun	185	127	312	Limestone	65	52	117
Chambers	94	122	216	Lowndes	10	15	25
Cherokee	46	26	72	Macon	42	69	111
Chilton	46	30	76	Madison	470	383	853
Choctaw	14	11	25	Marengo	33	19	52
Clarke	41	38	79	Marion	23	22	45
Clay	30	20	50	Marshall	136	87	223
Cleburne	19	20	39	Mobile	365	333	698
Coffee	105	85	190	Monroe	44	35	79
Colbert	45	41	86	Montgomery	563	517	1,080
Conecuh	9	7	16	Morgan	198	161	359
Coosa	14	8	22	Perry	21	6	27
Covington	73	81	154	Pickens	10	6	16
Crenshaw	26	16	42	Pike	38	46	84
Cullman	104	85	189	Randolph	47	57	104
Dale	96	55	151	Russell	74	87	161
Dallas	78	93	171	St. Clair	64	48	112
DeKalb	80	63	143	Shelby	214	225	439
Elmore	104	85	189	Sumter	9	6	15
Escambia	66	71	137	Talladega	107	90	197
Etowah	137	106	243	Tallapoosa	117	127	244
Fayette	13	9	22	Tuscaloosa	79	75	154
Franklin	31	17	48	Walker	47	51	98
Geneva	42	32	74	Washington	9	14	23
Greene	2	2	4	Wilcox	15	14	29
Hale	5	6	11	Winston	11	15	26
Henry	35	32	67	TOTAL	7,119	6,542	13,661

Enrollment By States And Territories – Fall Quarter, 1996

State	Male	Female	Total	State	Male	Female	Total
Alaska	7	3	10	New Jersey	58	24	82
Arizona	14	12	26	New Mexico	8	2	10
Arkansas	31	20	51	New York	67	46	113
California	71	50	121	North Carolina	103	61	164
Colorado	20	22	42	North Dakota	3	5	8
Connecticut	23	13	36	Ohio	67	49	116
Delaware	10	4	14	Oklahoma	11	11	22
District of Columbia	0	4	4	Oregon	5	11	16
Florida	635	644	1,279	Pennsylvania	52	42	94
Georgia	1,168	1,148	2,316	Rhode Island	7	2	9
Hawaii	4	4	8	South Carolina	144	87	231
Idaho	5	1	6	South Dakota	2	3	5
Illinois	49	57	106	Tennessee	364	388	752
Indiana	27	44	71	Texas	118	115	233
Iowa	4	8	12	Utah	13	4	17
Kansas	10	12	22	Vermont	1	2	3
Kentucky	136	142	278	Virginia	142	116	258
Louisiana	170	170	340	Washington	12	11	23
Maine	7	2	9	West Virginia	12	4	16
Maryland	59	38	97	Wisconsin	25	18	43
Massachusetts	23	16	39	Wyoming	2	1	3
Michigan	37	24	61	Other States	3,896	3,583	7,479
Minnesota	12	9	21	All States	11,015	10,125	21,450
Mississippi	94	64	178	United States Territories and Possessions			
Missouri	41	35	76	American Samoa	1	0	1
Montana	4	5	9	Puerto Rico	3	2	5
Nebraska	4	2	6	Guam	0	2	2
Nevada	6	4	10	Virgin Islands	1	2	3
New Hampshire	9	4	13	Total	5	6	11

Enrollment By Foreign Country – Fall Quarter, 1996

Country	Male	Female	Total	Country	Male	Female	Total
Argentina	1	0	1	Lebanon	3	0	3
Armenia	1	1	2	Lesotho	1	0	1
Australia	0	1	1	Liberia	2	0	2
Austria	0	1	1	Madagascar	0	1	1
Bahamas	0	4	4	Malaysia	3	2	5
Bangladesh	6	0	6	Mali	2	0	2
Belgium	2	2	4	Marshall Island	0	1	1
Benin	1	0	1	Mexico	6	1	7
Bolivia	1	0	1	Mozambique	1	1	2
Brazil	8	4	12	Nepal	7	0	7
Burma	1	0	1	Netherlands	2	1	3
Cameroon	1	0	1	New Zealand	1	0	1
Canada	11	10	21	Nigeria	4	1	5
Cape Verde	1	2	3	Norway	0	1	1
China (PRC)	105	52	157	Pakistan	4	0	4
Colombia	0	1	1	Panama	3	0	3
Costa Rica	1	0	1	Paraguay	0	1	1
Croatia	1	0	1	Philippine Islands	2	1	3
Cuba	0	1	1	Poland	1	0	1
Dominican Republic	0	2	2	Portugal	2	1	3
Ecuador	1	0	1	Romania	1	0	1
El Salvador	1	0	1	Russia	5	2	7
Egypt	3	1	4	Saudi Arabia	1	0	1
Ethiopia	1	0	1	Senegal	1	0	1
France	1	3	4	Singapore	1	1	2
Germany	5	6	11	South Africa	2	1	3
Ghana	3	0	3	Spain	8	0	8
Greece	5	1	6	Sri Lanka	3	1	4
Guatemala	1	0	1	St. Kitts & Nevis	0	1	1
Haiti	1	0	1	Sudan	1	0	1
Honduras	1	1	2	Suriname	1	0	1
Hong Kong	2	0	2	Sweden	3	0	3
Hungary	5	3	8	Switzerland	1	0	1
Iceland	2	1	3	Taiwan	28	20	48
India	83	19	102	Tanzania	0	1	1
Indonesia	4	2	6	Thailand	7	5	12
Iraq	0	2	2	Trinidad	2	1	3
Ireland	1	0	1	Turkey	8	2	10
Israel	2	1	3	Uganda	2	0	2
Italy	0	1	1	Ukraine	1	1	2
Jamaica	1	3	4	United Kingdom	12	6	18
Japan	8	6	14	Vietnam	1	1	2
Jordan	2	0	2	Venezuela	5	1	6
Kenya	3	0	3	Yugoslavia	2	0	2
Korea	19	3	22				
Kuwait	1	0	1				
				TOTAL (Foreign)	437	190	627

Index

Page references apply to the first page of subject listed.

— A —

Absences	22
Academic Common Market	39
Academic Policies	12
Academic Program Assessment	19
Academic Programs and Curricula	18
Accountancy	
school of	66
curriculum	67
graduate degrees	187
courses	229
Administration	4, 441
Admissions	
application for	12
freshmen	12
transfer students	13
Advanced placement	13, 19
Aerospace Engineering	
department of	100
curriculum	100
graduate degrees	187
courses	231
Aerospace Studies, courses	234
Agricultural Business and Economics	
curriculum	49
courses	235
Agricultural Economics	
graduate degrees	187
Agricultural Engineering	
curriculum	50, 103
department of	50, 103
graduate degrees	188
courses	238
Agricultural Experiment Station	
staff	483
substations and fields	488
Agricultural Journalism, curriculum	50
Agricultural Science, curriculum	51
Agriculture, College of	
minors	49
Pre-Veterinary Medicine option	48
dual degree program	48
curricula	49
Agriculture and Engineering, dual degree	48
Agronomy and Soils	
curriculum	51
graduate degrees	189
courses	240
Air Force Aerospace Studies	
department of	222
scholarship program	222
flight program	223
courses	234
Alabama students, policy for	36
Anatomy and Histology	
graduate degrees	189
courses	427
Animal and Dairy Sciences	
curriculum	52

options	52
graduate degrees	189
courses	243
Anthropology	
major	131
courses	415
Apparel Merchandising, Design and Production Management	121
Applied Mathematics (See Mathematics)	
Architecture, Design and Construction, College of	
departments	59
degrees	59
admission	59
transfer students	59
Architecture	
school of	59
degrees	60
curriculum	61
courses	245
Archives	10
Art	
department of	140
curriculum	141
major	131
graduate degree	190
courses	249
Arts and Humanities, Center for	128
Attendance, class	22
Audiology, courses	276
Auditors, admission of	14
Automobiles. <i>See Vehicle Registration</i>	
Aviation Management	
curriculum	100
courses	252

— B —

Bachelor's Degree Requirements	15
Biochemistry	
curriculum	156
graduate minor	218
Biology, courses	255
Biomedical Sciences	
courses	255
graduate degree	217
Bookstores	46
Botany	
minor in	154
curriculum	155
courses	255
Botany and Microbiology	
courses	255
graduate degrees	190
Building Science	
department of	60
curriculum	63
graduate degree	191
courses	259
Business, College of	
degrees	65

curriculum	65
Pre-Business program	66
professional options	65
admission	65
graduation requirements	66
advisory service	66
cooperative education	66
Business Administration	
graduate degrees	191
Business Economics, curriculum	67
Business and Office Education, curriculum ..	89

— C —

Calendars, University	6, 220
Caroline Draughton Village	41
Center for Arts and Humanities	128
Charges	33
Chemical Engineering	
department of	104
curriculum	105
specializations	105
graduate degrees	192
courses	260
Chemistry	
curriculum	155
curriculum in biochemistry	156
graduate degrees	192
courses	263
Child Welfare. <i>See Social Work</i>	
Chinese, courses	321
Civil Rights Compliance	2
Class Attendance	22
Classics Minor	129
Classification, student	25
Civil Engineering	
department of	107
curriculum	107
graduate degrees	193
courses	266
Clinics, special	45
College Level Examination Program (CLEP) ...	13
Communication	
major	131
graduate degrees	193
courses	271
Communication Disorders	
major	131
graduate degrees	194
courses	275
Communications (Publications), student	44
Community Planning	
graduate degree	194
courses	247
Composition, Music	144
Computer Engineering, curriculum	110
Computer Science and Engineering	
department of	109
curricula	109
graduate degrees	194
courses	277
Computing, University	11
Confidentiality of Student Records	26

Consumer Affairs	
department of	121
curricula	121
graduate degrees	195
courses	281
Cooperative Education	
Program	31, 66, 90, 98, 128, 154
Core Curriculum	16
Corporate Journalism, major	132
Correspondence, credit earned through	19
Correspondence Study	19, 31
Counseling, Pre-College. <i>See Summer Orientation</i>	
Counseling and Counseling Psychology	
graduate degrees	195
courses	284
Course load	24
Criminal Justice	
major	132
courses	286
Criminology	
major	133
courses	416
Cultural Programs. <i>See Music, Theatre and Lectures</i>	
Curricula	
School and College	47
interdepartmental-interdisciplinary ..	47, 217
Curriculum and Teaching	
department of	74
graduate degrees	196
courses	287
Curriculum	
change of	25
model change	25

— D —

Dairy Science. <i>See Animal and Dairy Sciences</i>	
Dauphin Island Sea Laboratory	
courses at	338
Dean's List	22
Degrees	
requirements for	15, 179, 182, 183, 185
Directory Information, release of	27
Disabilities, accommodation for	15
Discipline	45
Discrete and Statistical Sciences	
graduate degrees	197
courses	295
Dormitories. <i>See Housing</i>	
Dual degree programs	48, 98, 153
Dual Objectives Programs	90, 126

— E —

Early Childhood Education	
curriculum	74
courses	287
Earth Science	157
Ecology, graduate minor	218
Economics	
department of	67
curriculum	67

Liberal Arts major	133
minor	67
graduate degrees	197, 217
courses	297
Education, College of	
accreditation	72
curricula	72
scholastic requirements	72
program options	73
specialization	73
field experiences	90
dual objectives program	91
non-teaching options	91
graduate programs	95
teacher certification	95
Learning Resources Center	96
Educational Foundations, Leadership and Technology	
graduate degrees	198
courses	300
Educational Leadership, courses	300
Educational Media, courses	300
Educational Records	26
Electrical Engineering	
department of	110
curriculum	111
graduate degrees	198
courses	306
Elementary Education	
curriculum	74
courses	288
Eligibility, academic	20
Emeriti personnel	475
Employment, student	39
Engineering, College of	
admission	97
dual degree	98
degree requirements	99
programs	97
pre-Engineering curriculum	99
departments	100
Engineering, courses	311
Engineering Experiment Station	499
Engineering Extension Service	
programs	98
staff	499
English	
major	133
Education curriculum	82
graduate degrees	199
courses	311
English As A Second Language Program	32
English Composition, requirements for	
freshmen	17
Enrollment	24
Enrollment statistics	500
Entomology	
graduate degrees	200
courses	315
Integrated Pest Management	53
Environmental Engineering. <i>See Civil Engineering</i>	
Environmental Science, curriculum	108
Environmental Studies, graduate minor	218
Equal Employment Opportunities	

Examinations	23
Experiment Stations	
Agricultural	483
Engineering	98, 499
Extension System, Cooperative	
option	126
staff	489
county staffs	493

- F -

Faculty and Staff	341
Fees	33
Field Experiences (Education)	90
Fifth-Year Program in Education for Liberal Arts students	128
Finance	
department of	67
curriculum	68
graduate degree	200
courses	317
Financial Aid	39
Financial Information	33
Fine Arts, School of	
departments	140
transfer students	141
curricula	141
Fisheries and Allied Aquacultures	
curricula	54
graduate degrees	200
courses	318
Fisheries Management	
science option	54
production option	54
Pre-Vet option	55
Food Services	42
Foreign Languages	
majors in	134, 140
education curriculum	83
courses	320
Foreign Languages-International Trade	
major	134
Forest Engineering	
curriculum	103, 120
courses	329
Forest Products, courses	33
Forestry, School of	
description	117
admission	117
curricula	117
honors program	119
graduate degrees	201
courses	332
Foundations of Education, courses	303
Foy Union	44
Fraternities, social	45
French	
major	134
minor	129
graduate degrees	202
courses	321
Freshmen, admission of	12

— G —

General Science Education, curriculum	74
Geography	
major	134
courses	335
Geological Engineering	108, 154, 157
Geology	
curriculum	156
graduate degree	202
courses	336
German	
major	134
minor	129
courses	323
Grades	19, 178
Graduate School	
admission	173
application procedures	175
calendar	220
master's degree program	179
master's options	181
doctoral degrees	183
specialist in education degrees	182
graduate degrees offered	187
minors	218
research program with Oak Ridge	174
courses	339
Graduate Student Organization	174
Graduation Honors	24
Greek, courses	324
Grievance policy, academic	23
Gulf Coast Research Laboratory	
courses at	338

— H —

Health Administration, courses	340
Health Services Administration, major	135
Health Center, Student	43
Health and Human Performance	87, 91
graduate degrees	202
courses	340
History	
major	135
graduate degrees	203
courses	345
History, requirements in	17
Honors	
programs	24, 29, 119, 128, 154
dean's List	22
graduation with	24
honor societies	32
Horticulture	
curricula	55
graduate degrees	203
courses	349
Hotel and Restaurant Management	
curriculum	124
courses	388
Housing	
single students	40
married and graduate	41
off campus	42

Human Development and Family Studies	
department of	123
curriculum	123
graduate degrees	204
courses	351
Human Resources Management	70
Human Sciences, School of	
degrees offered	121
departments of	121
dual objective program	126
Cooperative Extension option	126

— I —

Independent learning	31
Industrial Design	
curriculum	64
graduate degree	204
courses	354
Industrial and Systems Engineering	
department of	111
curriculum	112
graduate degrees	204
courses	355
Instruction	
division of	8
courses of	228
Insurance, health	43
Interdepartmental Education, courses	359
Interdepartmental-interdisciplinary curricula	47
Interdepartmental programs	47, 217
Interior Design	
curriculum	62
courses	248
Interior Environments, curriculum	122
International Business, curriculum	68
International students, admission of	14
Italian, courses	324
Italian Studies Minor	130

— J —

Japanese, courses	324
Jazz Studies	145
Journalism	
majors	50, 132, 136
courses	359

— L —

Laboratory Technology	
curriculum	158
courses	360
Landscape Architecture	
curriculum	62
courses	249
Language proficiency, courses	321
Large Animal Surgery and Medicine	
graduate degrees	205
courses	428
Latin American Studies	
major	136
program in	46

Latin, courses	324
Learning Resources Center	96
Liberal Arts, College of	
description of	128
degrees	128
dual program with Engineering	130
cooperative education program	128
majors	131
School of Fine Arts	140
Libraries	10
Licensure in pharmacy, requirements for	151
Literature requirement	17
Loans, student	39

— M —

Majors	
change of	25
in Liberal Arts curriculum	129
Management	
department of	69
graduate degrees	205
courses	360
Management Information Systems	70
Marine Biology, curriculum	164
Marketing Education	89
Marketing and Transportation	
department of	71
majors	71
minor	71
graduate degree	205
courses	364
Married and Graduate Students	41
Mass Communication, major	136
Materials Engineering	
curriculum	114, 154
graduate degrees	206
courses	366
Mathematics	
curriculum	159
courses	369
Applied Mathematics	160
Applied Discrete Mathematics	160
Education curriculum	78, 84
Discrete and Statistical Sciences	295
graduate degrees	206
Meals	42
Mechanical Engineering	
department of	113
curriculum	113
graduate degrees	207
courses	374
Medical Clinic	43
Medical Technology, curriculum	159
Microbiology. <i>See also Botany</i>	
curriculum	161
option	168
courses	257
Middle School Education, courses	290
Military Science	
credit for	19
department of	223
programs	223
courses	378

Military Service credit	19
Minors	49, 67, 126, 127, 129, 154, 218
Molecular Biology	162
Music	
department of	142
Liberal Arts major	137
minor	130
curricula	143
degrees	142
graduate work	142
graduate degree	207
courses	379
Music Education, courses	290
Music, Theatre and Lectures	44

— N —

National Honor Societies	32
National Recognition Societies	32
Naval Science	
department of	226
programs	226
courses	383
Non-Alabama students, policy for	36
Nursing, School of	
degree offered	147
curriculum	147
admission	148
academic regulations	148
accreditation	149
courses	384
Nutrition and Food Science	
department of	124
majors	124
curriculum	124
graduate degrees	208
courses	386

— O —

Off-Campus Housing	42
Officers, Administrative	
general	4, 441
academic	5, 441
Operations Management	69
Organizations	45
Outreach	
description of	9
credit earned through	19, 31

— P —

Paraprofessional Staff	42
Parking Permit Registration	46
Pathobiology	
graduate degrees	208
courses	428
Performance, Music	143, 381
Pest Management, curriculum	53
Pharmaceutical Sciences	
graduate degrees	209, 217
courses	389

Pharmacy Care Systems		
graduate degrees	209	
courses	391	
Pharmacy Doctorate, courses	392	
Pharmacy Practice, Clinical, courses	393	
Pharmacy, School of		
admission	150	
program	150	
readmission	150	
academic regulations	151	
licensure	151	
continuing education program	151	
Doctor of Pharmacy degree	151	
Philosophy		
major	137	
courses	395	
Physical Education		
credit for	19	
curricula	87, 91	
courses	340	
Physical Science, courses	396	
Physics		
curriculum	162	
graduate degrees	209	
courses	397	
Physiology and Pharmacology		
graduate degrees	210	
courses	430	
Piano Pedagogy	144	
Placement, advanced	19	
Plant Molecular Biology, graduate minor	219	
Plant Pathology		
graduate degrees	210	
courses	400	
Political Science		
major	137	
minor	130	
graduate degrees	211	
courses	401	
Portuguese, courses	325	
Poultry Science		
curriculum	56	
option	57	
graduate degrees	211	
courses	404	
Pre-Business program	65	
Pre-Dentistry, curriculum	164	
Pre-Engineering, curriculum for	99	
Pre-Law, option	130	
Pre-Medicine		
option	106	
curriculum	165	
Pre-Nursing Science, curriculum	147	
Pre-Optometry, curriculum	165	
Pre-Pharmacy, curriculum	167	
Pre-Physical Therapy, curriculum	166	
Pre-Professional Curricula	164	
Pre-Veterinary Medicine		
curriculum	53, 167	
options	55, 168, 170	
Probation, academic	20	
Progress, satisfactory	21	
Psychology		
major	138	
graduate degrees	212	
courses	406	
Public Administration		
major	138	
graduate degrees	212	
Publications. <i>See Communications</i>		
Public Relations		
major	138	
courses	275	
Purpose of the University	10	
 — R —		
Radiology		
graduate degrees	213	
courses	431	
Radio/Television/Film, courses	273	
Reading Education, courses	291	
Readmission	15, 24	
Recognition Societies	32	
Records, student		
confidentiality of	26	
access to	26	
release of	28	
amending procedures	27	
challenge of	27	
Recreational Services	44	
Registration	24	
Regulatory Services, State	499	
Rehabilitation and Special Education		
graduate degrees	214	
courses	409	
Release of Directory Information	27	
Release of Educational Records	28	
Religion		
major	139	
courses	413	
Religious Studies Minor	130	
Research	9, 174, 179	
Reserve Officers' Training Corps	222	
Residence halls. <i>See Housing</i>		
Residence, requirements for	40	
Resident Involvement Opportunities	42	
Resignation (withdrawal)	25	
Rural Sociology		
curriculum	58	
courses	237, 415	
Russian, courses	325	
 — S —		
Satisfactory Progress	21	
Scheduling	24	
Scholarships	39, 222, 225, 226	
School and College Curricula	47	
Sciences and Mathematics, College of		
degrees	153	
dual degree with Engineering	153	
Teacher Education	154	
cooperative education	154	
advisory services	154	
general curriculum	155	
pre-professional curricula	164	
courses	413	
Second degree, requirements for	24	

Secondary Education, courses	293
Sexual Harassment	2
Small Animal Surgery and Medicine	
graduate degrees	215
courses	431
Social Fraternities	45
Social Sciences, curriculum	86
Social Work	
major	139
minor	130
courses	413
Sociology	
major	139
graduate degrees	217
courses	413
Soils. <i>See Agronomy and Soils</i>	
Sororities	45
Spanish	
major	140
minor	130
graduate degrees	215
courses	325
Special Academic Opportunities	28
Special students, admission of	14
Speech Pathology, courses	275
Sports, intramural	44
State Chemical Laboratory	499
Statement of Role	8
Student Academic Grievance Policy	23
Student Access to Records	26
Student Health	43
Student Government Association	45
Student Life	44
Student Records	26
Student Services	40
Study Abroad	31
Summer Orientation	15
Suspension, academic	20

— T —

Teacher certification	95
Teacher Education	
admission to	90
for Liberal Arts students	128, 154
Textile Chemistry	
curriculum	115
courses	418
Textile Engineering	
department of	114
curriculum	116
courses	418
Textile Management and Technology	
curriculum	116
courses	419
Textile Science, graduate degree	218
Theatre	
department of	145
curricula	145
major	140
courses	420
Transfer students	
admission	13
credits allowed	13

Transportation and Physical Distribution	
curriculum	71
courses	366
Trustees, Board of	3

— U —

University, The	
history	8
purpose	10
University Chapel	44
University Computing	11
University Courses	423
University Program Council	44
Urban Forestry, graduate minor	219

— V —

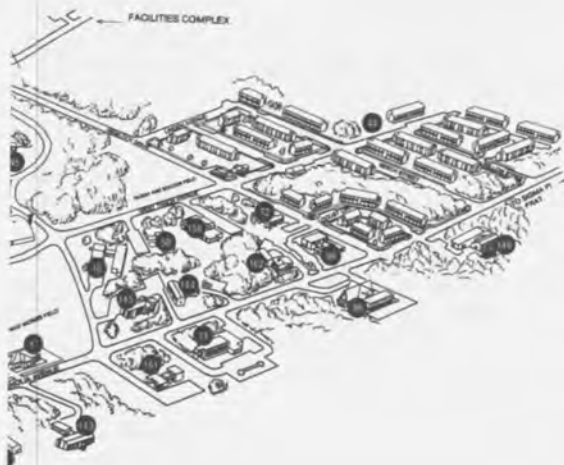
Vehicle Registration	46
Veterinary Diagnostic Laboratory	499
Veterinary Medicine, College of	
admission	170
requirements	170
curriculum	172
courses	424
Visual Arts	140
Vocational and Adult Education	
graduate degrees	216
courses	433
Vocational Rehabilitation Service	96

— W —

Wildlife Science	
curriculum	163
option	169
Women's Health Services	43
Women's Studies Minor	130
Work-Study program	39

— Z —

Zoological Sciences	163
Zoology and Wildlife Science	
graduate degrees	216
courses	435
Zoology	
curriculum	163
option	169



AUBURN UNIVERSITY CAMPUS

© Auburn University, March 1996

2 23 24 25 26 27 28 29 30 31

1 Hall 1, Harper	K-11	133. Residence Hall, Sewell	G-12	156. Tau Kappa Epsilon	I-25
2 Hall 2, Katie Broun	K-11	134. Ross Square	M-12	157. Telecommunications & ETV	F-12
3 Hall 3, Little	K-12	135. Ross Hall, Engineering	M-12	158. Terrell Dining Hall	F-7
4 Hall 4, Teague	K-12	136. Rouse Building, Life Sciences	I-6	159. Textile Engineering Building	N-16
5 Hall 5, Dowdell	K-10	137. Sanford Hall, Administration	M-11	160. Thach Hall	K-15
6 Hall 6, Glenn	J-9	138. Saunders Hall	I-11	161. Theta Chi	K-24
7 Hall 7, Lane	J-12	139. Sciences & Mathematics HQ	I-10	162. Theta Xi	J-26
8 Hall 8, Lupton	J-10	140. Scott-Ritchey Labs	B-27	163. Tichenor Hall	L-14
9 Hall 9, Keller	J-11	141. Seed Technology Lab	A-4	164. University Chapel	M-9
10 Hall 10, Owen	J-12	142. Sheep Barn	A-22	165. USDA Research Lab	C-26
11 Hall A, Hollifield	H-7	143. Sigma Alpha Epsilon	L-23	166. USDA Soil Tillage	E-10
12 Hall B, A. Duncan	G-8	144. Sigma Chi	J-25	167. Wallace Center, VAE	J-18
13 Hall C, Toomer	G-9	145. Sigma Nu	J-24	168. War Eagle Aviary	I-13
14 Hall D, Dobbs	G-9	146. Sigma Phi Epsilon	J-29	169. War Eagle Sculpture	H-16
15 Hall E, Dunn	G-10	147. M.W. Smith, Forestry	I-7	170. Ware Imaging Center	B-27
16 Hall F, Graves	F-9	148. O.D. Smith, Industrial Design	N-9	171. Wilmore Engineering Labs	N-13
17 Hall G, Dowell	F-8	149. Soccer Complex	E-16	172. Wilson Livestock Arena	D-10
18 Hall H, Knapp	F-7	150. Spidle Hall, Human Sciences	K-9	173. Young Varsity Courts	H-18
19 Hall J, Boyd	F-7	151. Sports Arena	I-13	174. Zoology Research Lab	I-19
20 Hall K, Sasnett	F-9	152. State Pesticide Lab	A-4		
21 Hall L	F-9	153. Student Activity Center	G-17		
22 Hall M	F-7	154. Sugg Lab, Veterinary Medicine	C-30		
23 Hall Noble	M-18	155. Swingle Hall, Fisheries	H-8		

